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AND
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F. E. LIPPERT AND A. HOLMES

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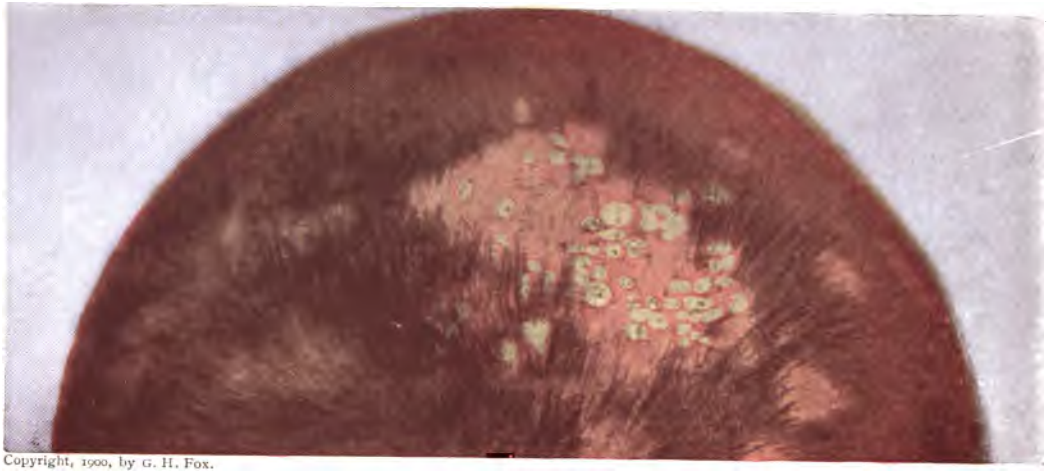
WHEN TO SEND FOR THE DOCTOR

AND

WHAT TO DO BEFORE THE DOCTOR COMES



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Favus.

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WHEN TO SEND FOR THE DOCTOR

AND

WHAT TO DO BEFORE THE DOCTOR COMES

BY

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WITH 16 FULL-PAGE ILLUSTRATIONS AND FRONTISPIECE IN COLOR

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FOREWORD

To fathers, mothers, and teachers, and, in fact, to every one interested even remotely in children, the critical question must recur again and again, "Shall we send for the doctor?"

To answer this query in the simplest and most untechnical manner possible, and yet with sound scientific caution, this little book has been written. It is the result of both medical and psychological experience gained in both general and clinic practice covering a number of years. It is arranged and worded so that any person without technical training can quickly gain the requisite knowledge concerning the common ills and habits, physical and mental, of children. It is a book pre-eminently for parents, teachers, social workers, and all who work with children.

The plan of the book is different from others in the same field. It cata-

logues the simple, every-day, well-known ailments by their common names, and then describes the symptoms of the harmless indispositions, tells how to treat them, and sharply marks them off from the serious diseases demanding a doctor's advice. The book tells when *not* to send for the doctor, exactly *when* to send for the doctor, and what to do in emergencies before the doctor comes. A carefully prepared index makes it immediately easy to look up any disease of a child. A number of the illustrations in the book are from original photographs. We are, however, indebted for additional plates to Holmes' "Conservation of the Child," Willard's "Childhood Surgery," Cotton's "Diseases of Children," Davis' "Mother and Child" and Cooke's "Nurses' Handbook of Obstetrics."

THE AUTHORS.

Philadelphia, 1913.

PART I

SIMPLE NON-CONTAGIOUS AND CONTAGIOUS DISEASES

CHAPTER I

BABY'S CRIES

"SHALL we send for the doctor?" No one asks this question oftener than the mother with a young baby. The doctor has made his last call, the nurse has been dismissed, and the young mother is left alone to face the ordeal of baby's bath. If he accepts his ablutions with good humor, well and good. But suppose he cries? Suppose, in spite of all his anxious mother does, he keeps on crying? What does it presage? And what do the other wails of the infant mean? Peevishness, hunger, discomfort, or disease? Who can tell but the doctor? With no one but herself to hear her baby's cry—a hundred times a day, the mother "feels herself at sea."

After the morning bath, a healthy baby should sleep for two hours or

more, until his regular feeding time. If, instead, he is cross and fretful, the mother need not always take alarm. Let her make sure that there are no pins in his napkins, socks, bands, and shirts that are causing pain or even uncomfortable pressure upon his tender skin. Too many little buttons will be equally annoying to him.

Sometimes the very ordeal of being dressed, especially if it be made a "fussy" one, frets a baby. To avoid this, it is an excellent plan to make his garments as few as possible. If a knitted woollen undershirt is worn, let it be one of extra length, in order that it may be used also as an abdominal band or binder. This provides for two garments in one. In addition there will be needed nothing more than a flannel petticoat and outside "slip" or dress. If these are both made with sleeves and with "skirts" of nearly the same length, the two may be slipped on

Proper dressing for young infant—"in first long clothes." *A*, petticoat; *B*, undervest; *C*, outer dress.

together over baby's head; should the knitted undervest and band be too costly, the undervest may be made of an inexpensive soft flannel like the petticoat. In this event the three garments (undershirt, petticoat, and slip) may be put on all at one time, simplifying the morning toilet extremely, and disturbing baby's nerves far less than a more elaborate and needless supply of garments will occasion. If buttons are used upon his clothes, let them be put on the front rather than on the back; this adds greatly to his comfort; or, it is a good plan to substitute, for most of the buttons, narrow tape that may be easily tied. This may spare many of baby's cries.

Cry of Hunger.

"If baby cries after feeding time, what shall I do?" asks another mother. If this crying is attended with vigorous sucking of his fingers, and if it be a

daily occurrence, he is hungry. Let the mother weigh the baby every day.

Professor Rotch, of Harvard, says: "I count the systematic, daily weighing of infants during their first year more useful in determining their nutritive condition than any other method we have." The average daily gain during the first two months should be at least two-thirds of an ounce. The birth weight should be doubled at five months and trebled at fifteen months.

Cry of Indigestion.

If baby gains and loses in weight by turns, and feeding does not quiet him, but makes him cry the harder, he is suffering from indigestion.

In this case, send for the doctor. Make no change in feeding till he is consulted.

Cry of Colic.

If the cry is a shrill shriek, attended with active kicking and struggling and

drawing up of the legs and feet upon his belly, baby has colic. This is not serious. It can be relieved by wringing soft flannel dipped in hot water, and placing it upon the little abdomen. Sometimes a soft flannel bag filled with a mixture of ground cloves, cinnamon, ginger, and allspice, then steeped in boiling water and wrung out, may be used in the same way and will put the baby to dreaming peacefully.

Cry of Earache.

Piercing cries attended with much tossing of the baby's head from side to side, with a constant tendency to movements of the hands to the head, mean earache. Though this is not always serious, the doctor must be consulted. While waiting for him the ear-pain may be relieved by a tiny hot-water bottle placed over the ear. A flannel bag shaped like a glove-finger may be filled

with heated salt and placed within the hollow of the ear.

Cry of Temper and Habit.

A loud, long cry, accompanied by " protest," or beating of the air with the fists, arms, feet, and legs, means temper. This must not be " coddled," lest it become the cry of habit that tries a mother's patience. The baby cries to be held, to be rocked, to be walked, or for anything by which it has been " spoiled." When the child gets what it wants, it ceases at once.

This is the cry for which the filthy and pernicious "pacifier," or "mother's comforter," is used so often and so mistakenly. We recognize it at once by its description as the nipple and ring—put into the child's mouth at the first whimper of crying, falling to the floor or out of his carriage into the street, or into the dust and dirt wherever he may hap-

pen to be, when he falls asleep. If he awakes crying, back into his mouth goes the "comforter" without thought of cleansing it, and thus much harm is done in every way.

The Cry of Wasting Disease.

A baby that seems healthy at birth and for the first few weeks may develop, at about the sixth week, a hoarse and ceaseless cry. If this continues all through the night and is attended by constant snuffling, the baby needs the doctor's most watchful care.

The Cry of Rickets or Rhachitis.

Sometimes between the sixth and fifteenth months a baby will develop into a cross and restless child. If this is accompanied by profuse sweating of the head, enough to wet the pillow and the baby's neck-bands, let the doctor know at once. This condition is a warning of rickets and must not be neglected.

CHAPTER II

COLDS

"Colds" and Their Significance.

In the case of children, exercise and fresh air are as necessary as proper feeding. They must not be confined within doors like hot-house plants. If acute illness or severe weather must keep them in the house, let the nursery or living-room be kept at an even temperature of 70 degrees Fahrenheit, and insist upon an abundance of pure air in such a room.

Were these rules followed, "simple colds" among children would be less common. Proper clothing and cleanliness are likewise valuable in preventing constant colds. It is a mistake to dress children too heavily, or to cumber them with clothing in the house. It is better that they should be warmly but lightly

dressed within doors, and that sufficiently heavy wraps or outer garments be provided for out-of-doors. It is not an exaggeration to say that we have seen children, in the early fall months of the year, "piled" or wrapped with heavy undervests, waists, and skirts, these being fastened or sewn together in order that they might not be removed until the arrival of spring! If this did nothing else, it makes thorough bodily cleanliness impossible.

Daily bathing of the entire body, either by the sponging method or by the tub or basin, is necessary for good health. The skin, with its pores scattered everywhere upon its surface, acts like a heat regulator and ventilator for the body. When the pores are blocked by gathered dust and dirt and sweat, the skin can no more do its work than can the chimney and "drafts" and "flues" of a kitchen stove that have

become choked with ashes and dirt. Such a skin fails to protect the body from "taking cold."

Simple Colds.

How do we recognize a simple cold? It begins with slight chilliness or, at times, with a little feeling of fever or warmth. The head is hot, the cheeks may or may not be flushed; there is a discharge from the nose, at first thin and watery, later thick and ropy, blocking up the nostrils. When a child shows nothing more than these symptoms, a teaspoonful of castor oil to open the bowels, and half a glass of hot lemonade to aid the perspiration, are wise remedies.

In place of the hot drink, a hot mustard foot-bath may be given. This is prepared by mixing four tablespoonfuls of powdered mustard with a gallon of water made as hot as the skin of the

elbow can bear. Simple diet without meats and sweets for two or three days, and abundant pure air day and night, in playroom and bedroom, with as much rest as possible, will all help to make the cold short lived.

"Colds" a Sign of Rheumatism.

Simple colds may occur at every trifling change of temperature, or even without apparent cause. Becoming thus habitual they pass into what we call chronic colds, and may be an evidence of an unsuspected and inherited rheumatic condition, or the presence of the much-talked-of "uric acid" in the blood. When a child does develop this tendency, the doctor's advice must be sought without further parley.

"Colds" a Sign of Adenoids.

On the other hand, these habitual colds may have a very different cause,

and may arise from a condition of the nose and throat. Small or large, soft, spongy growths (called adenoids) behind the nose, at the back of the throat, may commonly excite these "colds" one after another. A child so affected will show certain other signs of these growths. The blocking up of the nose will bring about a habit of mouth-breathing, and even loud snoring at night. The mouth is not only open, but the upper jaw is apt to "hang over" beyond the lower, crowding the teeth. Speech may be thick or even imperfect enough to make it difficult to understand.

The presence of adenoids demands a surgical operation. Within six months after this is performed the "chronic colds" usually grow less frequent, and gradually, month by month, all the adenoid signs of face and jaw are less

noticeable, the child ultimately outgrowing them in many instances.

A Cold often the Beginning of Measles.

A cold may mean more than a common or chronic affection. When it is so severe that the child sneezes hard and often, when his eyes weep continually—the tears running down his face, when he persistently avoids the light, and is stupid and drowsy all day, it means not a simple cold but an attack of measles.

Every attack of measles needs the doctor, not for the disease alone, but for the evil effects which may follow. It is now understood that many instances of "adenoids" owe their beginning to an attack of measles. Moreover, many a victim of tuberculosis in later life may trace the origin of his fatal malady to the apparently harmless measles of his childhood.

Colds a Sign of Influenza or Grippe.

Grippe is claiming more victims among children within recent years. It also begins with a sudden heavy cold with the following peculiarities: An extremely high fever, a hard dry cough, and an acute soreness and sensitiveness of the flesh all over the body. These symptoms demand the doctor without delay.

Cold a Forerunner of Diphtheria.

When a cold shows no other signs than a persistent discharge from the nose, and this discharge appears very suddenly in thick bloody shreds or is streaked with blood, it is a danger signal of diphtheria. Lose no time here in sending for the doctor.

Cold the Precursor of Croup.

A child in all respects apparently well may contract cold by playing upon

a cold floor; at times a cold, damp bedroom, that has been scrubbed late in the afternoon and not thoroughly dried before bedtime, will work the same mischief. The following day may find him with a slight discharge from the nose, but as bedtime comes near he may be a little hoarse or may develop during the evening a hollow barking cough. After a few hours of sleep he will awake acting as though he were choking. His breathing will be harsh and almost crowing; the barking cough of the early evening will be deeper and harder. He is frightened, and if he tries to cry or speak, no words come.

Such an attack is one of false croup. Many children, particularly the weak and the rhachitic, seem predisposed thereto. It is a wise thing that the family medicine closet shall contain a two-ounce bottle of syrup of ipecac, that this remedy may be used to cut short a

nightly invasion of false croup. Five drops of this, given every half-hour till vomiting is produced, will usually make the child comfortable for the remainder of the night. To prevent repetition of such an attack, the bowels must be regulated and the diet must be made simple. For a day or two the child should be kept in the house in a well-ventilated, evenly-heated, and, if possible, sunny room. Daily sponge-baths in warm water, with cold water sponging of neck and chest, are good preventives of future attacks; but, if these measures fail, medical advice must be insisted upon to determine the possible cause of the condition.

Cold the Precursor of Whooping Cough.

A prolonged obstinate cold may lead to a cough that also grows distressingly worse at the hour of bedtime. In such cases it is not unusual to find that every

variety of cough mixture known has been given, but without great help. This is a mistake. The doctor must be consulted; if he discovers upon careful questioning that the cough has existed for ten to fifteen days and is even growing harder, he will doubtless suspect whooping-cough. He will be right in insisting upon the fact that this disease cannot safely be regarded as a trivial one, because of possible fatal after effects. Tuberculosis is very apt to develop as a result of whooping-cough; also certain serious nervous disorders may result therefrom,—*i.e.*, epilepsy, paralysis, blindness, and deaf-mutism have all been known to occur in children with neglected and therefore prolonged illnesses from whooping-cough.

Night Cough a Sign of Adenoids.

A child with adenoids may develop a cough that, like the above, also grows

worse at night. How shall the mother know that it means adenoids? Let her watch the child for any trace of mouth-breathing during the day, or his snoring at night, and a growing tendency to repeated colds. In addition, he may develop the troublesome habit of bed-wetting at night, and may grow increasingly irritable and peevish, or else indifferent and stupid. All these signs indicate adenoids, and, as we have advised before, only a surgical operation for their removal offers any hope of relief and cure.

CHAPTER III

SORE THROAT

Sore Throat Accompanying Adenoids.

A CHILD troubled with adenoids may awake, morning after morning, complaining of a dry sore throat. This arises from the irritation of the throat produced by the snoring and mouth-breathing of the night before. Mouth-breathing prevents the air from being sufficiently warm and moist to make it agreeable and unirritating to all the passage-way from the throat to the lungs. Proper breathing through the nose provides the needed heat and moisture that nature demands. The consequence, therefore, is that the mouth-breather, whether child or grown person, suffers habitually from dryness of all the air-passages.

Simple Sore Throat.

Cold, cough, and sore throat are apt either to accompany or follow one another in the ailments of early childhood.

If there is enough discharge from the nose to block up the passage, mouth-breathing will result, and we will have the dry, irritated sore throat described above. On the other hand, when a cough is present, if it is hard and dry, and frequent, it likewise results in an irritation of the lining of the throat.

There is a soreness of the throat that means more than either of these, however,—a soreness that makes swallowing a difficult, sometimes even a " tearful " matter. This condition is apt to be attended with slight or moderate feverishness. When a child complains of these " symptoms," look at his throat at once. If it shows only a very red surface, without spots (or ulcers) and

Examining child's throat, with tablespoon holding down the tongue.

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patches (or membrane), it is not necessarily serious. Under these circumstances let the child be given a teaspoonful of Husband's magnesia or milk of magnesia to open the bowels; at the same time let the throat be gargled or rinsed with a simple mixture of peroxide of hydrogen and lime water in equal proportions.

Sore Throat a Sign of Scarlet Fever.

When a sore throat is attended with painful swallowing, with high fever and vomiting, and possibly a convulsion, send at once for the doctor. These signs presage scarlet fever.

Sore Throat a Sign of Diphtheria.

Every complaint of sore throat must be heeded. Even a slight soreness, without high fever or painful swallowing, may reveal, to the mother's surprise, a gray-white "film" upon either tonsil or on the soft palate. If at the

same time the glands of the neck behind the jaw are swollen and painful, these are danger signals of diphtheria. Lose no time in sending for the doctor in such a case.

Simple Tonsillitis.

When, instead of the gray film described above, the tonsils are studded over with numerous yellow spots, pinhead in size, we have a simple tonsillitis. This needs the doctor's care, for such attacks point to rheumatic infection, which must not be neglected.

Quinsy.

When sore throat is accompanied by a husky voice and a complaint that swallowing is painful, an attack of quinsy is to be feared. An inspection of the throat will find one or both tonsils very red and very large; in truth, large enough at times to make it quite

impossible to open the mouth. Moreover, this form of sore throat is usually attended with decided fever and chills, due to the fact that pus is forming within the substance of the tonsils, and must be given a way of escape before the conditions improve. The lancing of the tonsillar abscesses is the only speedy or sure cure for an attack of quinsy.

CHAPTER IV

FEVERS

Fever.

MANY of the diseases of children are attended with fever. In infants and the very young, fever will take a higher course than from a similar cause in later life. Very high fever, therefore, is not always a serious matter; there are times when, after a doctor's careful examination of the child, high fever offers no explanation.

The mother, or care-taker, in estimating fever, must not trust to her sense of touch alone, because it is unreliable. Let her learn to "read" the clinical thermometer, purchasable for a small sum at any drug or department store.

This small apparatus consists of a sealed glass tube with about an inch-length bulb of mercury at its lower end.

Position of infant for introduction of thermometer.

The remainder of the tube contains a white porcelain scale marked off and numbered in degrees (these and the numbers are in heavy black, for easy reading). The scale extends usually from 90° to 110°, in intervals of fifths,—thus, 90°, 95°, 100°, 110°. At the point on the scale marking 98 4/5°, a tiny black arrow signifies this to be the temperature for ordinary or "normal" health.

The thermometer ready for use will show the mercury in the bulb to have expanded or "run up" into a thread-like silver line to about 95°. To use it, place the instrument under the tongue of the "patient," letting the lips hold it tightly for two minutes. In a baby it is best and most safely held in the opening of the rectum, or lower bowel, for one minute.

When the temperature is normal,—

i.e., no fever,—the thread-like column of mercury will have risen to the point on the scale marked by the arrow, 98 4/5°. When the column of mercury rises to any interval on the scale between 100° and 101°, the child is said to have slight fever; to any interval between 101° and 103°, moderate fever; to any interval between 103° and 105°, high fever.

Upon withdrawing the thermometer, shake it briskly till the mercury falls to the point marked at 95°. Wash it carefully in clean cold water. It must be washed before and after each using.

If for any reason whatever a thermometer is not obtainable, how is the mother to judge whether the child's condition is serious or not? If he comes running into the house red-cheeked and out of breath, shall she be alarmed? Not necessarily, because the flushed

face and forehead at such a time are probably wet or damp with perspiration. This child is overheated from exercise, not really feverish.

Should such a child show after violent exercise a face so flushed that it assumes a purplish blue, and the shortness of breath be painful, it is possible that he is overtaxing his heart. Let the mother have a watchful care for this, calling the doctor's notice to it if it occurs often.

In real fever the red cheeks and forehead, instead of being covered with perspiration, are burning and dry; the hands are hot to the touch; in a baby there are great thirst and restlessness under these conditions; in an older child there are peevishness, or great indifference, sudden dislike of food, thirst, and perhaps headache.

If the mother has been hard at work, cooking, or doing any task that has con-

fined her near the stove or range, it will be difficult for her to detect the true measure of the child's hot cheeks. Therefore, at such a time, the little fever thermometer is the only safe guide for her.

Fever in Stomach and Bowel Troubles.

In a child sudden high fever occurs often with mild attacks of indigestion. Unripe fruit, candy or pastry to which he may be unaccustomed, strawberries, tomatoes, or vegetables of too coarse a fibre,—any of these undigested and undissolved in the stomach will cause vomiting, diarrhœa, thirst, and loss of appetite. Fever is present invariably under these conditions.

Such attacks are not serious. As soon as the vomiting and purging relieve the stomach and bowels of the offending material, the temperature will fall,—*i.e.*, become normal.

FOR THE DOCTOR

Fever and Delirium.

Moderate temperatures, from 101° to 103°, in children are accompanied by more nervous excitement than the same amount of fever will arouse in adult life.

The mother need not be alarmed if a child with such a degree of fever becomes slightly delirious by day or restless by night. Such condition can be relieved speedily by the sponging of the child's body (a portion of it at a time) with cool water at a temperature from 80° to 85°, or with a mixture of equal parts of vinegar and water.

Fever and Sore Throat.

Fever and chilliness " by turn," with backache and headache, forewarn the mother of impending tonsillitis in a child, sometimes fully twenty-four hours before there is anything seen in the throat. It will never come amiss,

under these conditions, to see that the bowels are opened freely and the child kept within doors in a temperate and well-ventilated room. Of the first sign of yellowish " spots " in the throat the doctor must be advised at once.

Fever a Premonitory Sign of Scarlatina.

A child developing scarlet fever may show exactly the symptoms described above, but with the difference that the fever is higher (104° or 105°) and that it is accompanied by vomiting or a convulsion. Even though there be no spots seen within the throat, with these symptoms present, send for the doctor at once.

Fever in Middle-ear Disease.

Fever in children for which no cause can be found may signify inflammation of the middle ear, that portion concealed beyond the little " drum-head."

FOR THE DOCTOR

The trouble is unsuspected oftenest in infancy, because the delicate tissues of the middle ear, not being as firm as in older children, yield more readily to swelling, thus causing little or no warning pain.

Even in older children a seemingly trifling inflammation of the middle ear may be neglected. This is a serious and sometimes deadly mistake. Fever and earache existing together must have the doctor's attention at once. If the summoning of medical aid be delayed until discharge or suppuration appear, infection may be spreading from the middle to the inner ear, a most alarming condition.

Fever a Warning of Pneumonia.

Fever of 104° or even higher, with a decided chill or a convulsion, with rapid breathing, requires the doctor at once.

These symptoms associated mean pneumonia, in which delays are always dangerous.

Fever in Typhoid, Tuberculosis, and Malaria.

If, in spite of attention to the bowels and the diet, fever of moderate degree persists for two or three days, send for the doctor without further delay.

Typhoid fever, tuberculosis, and the several types of malarial fever, all show similar signs, at their onset, and only the physician is competent to be judge and guide in the reading of such signs.

CHAPTER V

THE SICK STOMACH

Vomiting.

ATTACKS of "indigestion" or vomiting are common from infancy throughout all childhood's stages. What do they signify?

They may be nothing but the result of overeating. If so, one or two days of complete rest of the stomach will act like magic in the restoration to health.

Should dieting not cure the attack, is it wise to depend on the corner drug-store for the every-day pepsin and the harmless soda mint? No, because repeated attacks of vomiting mean something more than merely an upset stomach, which only the doctor can decide.

Vomiting in Eye-strain.

Many a child that has been troubled for months, or even years, with vomit-

ing day after day, appearing at some time during the morning session of school, finds the condition cured, as though it has been "charmed" away, by the time he has worn his new glasses for a month. Repeated headaches, frowning lines between his eyes, and scowling forehead must warn every mother that such signs need the oculist's inspection.

Vomiting Associated with Worms.

When vomiting is attended with a loss of appetite, a foul odor to the breath, and such nervous symptoms as picking the nose, and grinding the teeth by day or night, worms may be suspected. Such suspicion must be reported at once to the doctor.

Vomiting in the beginning of Tuberculosis.

Many a child with vomiting is "dosed" by the mother or nurse for worms, when the cause of the trouble is

far more serious. Chronic indigestion, oftener than suspected, is a sign of an early stage of tuberculosis in children. There may be at the same time little or no fever and no alarming cough. So treacherous is this disease that repeated vomiting in a child not robust should have the doctor's careful consideration.

Vomiting in Intestinal Obstruction.

When sudden severe vomiting is accompanied by constipation of the bowels, with pain and soreness all over the belly, it is due to some obstruction in the large or small bowel. With such attacks there may be fever; quite as often, instead of fever there may be so much chilliness as to make the hands and fingers shrivelled and blue. Lose no time here in sending for the doctor.

Acute Vomiting in Typhoid Fever.

Instead of the constipation that characterizes the earliest week of typhoid

fever in adult life, this disease may make its appearance in children with attacks of vomiting. These will be associated with fever that has persisted without change for two or three days, with dull listlessness of the mind and sluggishness of the body. The doctor must be called at once.

Acute Vomiting in Scarlet Fever.

We have described heretofore the vomiting that ushers in scarlet fever habitually.

Acute Vomiting in Meningitis.

In tumors of the brain and in acute meningitis, acute sudden vomiting is a dreaded sign. It comes with such force that it is called "projectile," as though the contents of the stomach were shot from a cannon's mouth. This needs the doctor without delay.

This is one of the horrible accompani-

ments of the neglected ear disease described above. It is not a long route from the inner ear to the brain; when suppuration in the deepest portions of the inner ear is not checked, it takes this route, and a child may die from meningitis in which the ear disease was unsuspected or neglected.

CHAPTER VI

BOWEL TROUBLES

Diarrhœa.

LIKE vomiting, diarrhœa is in itself but a symptom, not a disease. It is, moreover, a symptom to which children are particularly prone.

Acute.

It may be acute and brief in duration. In infants such a thing as a sudden change in the day's temperature will provoke an attack. In older children a sudden fright, a sudden unexpected pleasure, or a dreaded ordeal in school may excite it.

Chronic.

It may be chronic—as such, not always long in duration, but attacking a child frequently. When this is the case,

diarrhœa may be a warning of marasmus, of rickets, or of tuberculosis, all of these being diseases of disturbed nutrition. Because of these facts, every attack of diarrhœa must be reported to the doctor.

In making such report, the mother or nurse must count the number of passages, or stools. She must describe their color, whether they be brown or greenish or yellowish. She must describe their nature, whether they are simply unusually soft passages, or watery, whether they are composed largely of mucus, or if they contain blood.

She must watch to see if the passage be one of easy movement or if it be attended with straining. Without all of these facts reported, the doctor will be at some loss in his careful accounting for the cause of any amount of diarrhœa.

Further than making such report, it is not safe for the mother or nurse to go. The condition is never one to be dismissed as a trivial one.

Constipation.

When the bowel passages are hard, dry, difficult, and infrequent, they are "constipated."

The daily, healthful "evacuation," or movements of the bowels, can be in part controlled by the diet. Enough food, and that of the right kind, must be eaten to produce sufficient quantity or bulk of waste matter, to persuade the bowel itself to work. Moreover, the mother or nurse must begin in the first months of infancy to form a fixed habit of emptying the bowel, by placing the child on the chamber, or chair, daily at an unvarying hour. The bowel can be taught thus to do its proper duty.

As in diarrhœa, the mother must be

watchful enough to report to the doctor the appearance of constipated stools. She must observe if they be dark in color, or gray-white, or putty-hued, or streaked with blood. She must report whether they be long, as though "moulded" from the bowel, or flat and ribbon-like, or in small ball-like masses.

When constipation exists in a child, if a piece of white castile soap, shaped into a small cone an inch in length, held in the bowel for a few minutes produces a movement, the mother can report to the doctor that only the lower bowel seems at fault. When this does not produce an evacuation, and the delayed stool is gray white and of bad odor, the small intestine is at fault.

In older children constipation is largely a matter of wrong diet, or of poor teeth and, therefore, insufficiently masticated food, or of lack of exercise,

and neglect of attention to a regular time for emptying the bowel.

What are the results of constipation? The chronic " bad breath " of children, the pale face, the cold hands and feet, the distended belly, are frequent and familiar. Irritability and peevishness, on the one hand, or dull listlessness of mind, on the other, may betoken constipation so long standing that it may result in slow poisoning of the entire system. Many headaches not due to eye-strain may arise from constipation. The condition, therefore, is one that demands a doctor's wise direction, in place of the frequent " dosing " at home.

CHAPTER VII

HEADACHE

Headache from Constipation.

AMONG very young children, headache is not a frequent occurrence. When it does exist, it is not apt to be "an attack of nerves," as in their elders, but is a result of unsuspected or even neglected conditions of surroundings, or of some physical defect, as of eyes or nose.

We have already hinted at the headache arising from constipation. In this instance a child will complain of pain in the front of the head just above the eyes, which is made worse by sudden movements of the head. It appears in company with a coated tongue and "bad breath." In girls given to the habit, not uncommonly the face is

"broken out,"—*i.e.*, covered with pimples of acne, a common skin disease. The latter condition is the one that will make a girl willing to see the doctor, though the constipation and headache may have been neglected with stolid indifference.

Headache from Poor Ventilation.

Many older children suffer from headache caused by breathing stale air in unventilated rooms by day and night. Such air is lacking in the oxygen that the blood of the body needs for its purification, and the part of the body first to feel the effect of this lack is the brain. Headache arising from such a cause is associated with pale face, dull eyes, persistent yawning, and disinclination for work at home or in school.

It ought not to be necessary that the doctor is the first to find the cause for these headaches, because fresh air is within the reach of all. A room need

not be "stuffy" to be warm. To be healthful, its temperature must range from 68° to 70° Fahrenheit, and it must be regulated by the heating apparatus of the house or of the room, not by the closing of doors and windows, thus excluding the air of "all out-doors."

Headache from Adenoids and any Form of Nasal Obstruction.

Precisely as the lack of oxygen in the blood from causes outside of the body operates in producing headache, causes within the body will result in the same disturbance.

When adenoids, or persistent catarrh of the nose, block the way to the free passage of air to and from the lungs, again we find the blood suffering from a want of oxygen, and again will the brain be the first to "cry out" its grievance.

Headaches arising from adenoids oc-

cur at the " root " of the nose, and are made worse by coughing, or by the bending of the head. They are associated with " chronic colds " (which see) and the habit of mouth-breathing. A child suffering from these symptoms is seen to have a thick nose with a broad bridge, a short upper lip and persistently open mouth, and irregular, misplaced, crowded teeth.

Nothing short of a surgical operation is to be advised under these circumstances. It will be followed usually by great relief from headache and " colds."

Headache from Eye-strain.

Headaches from eye-strain occur either in the front or the back of the head. They appear regularly after the eyes have been used for any work, as reading or sewing. They are accompanied, frequently, by " sick " stomach and vomiting.

FOR THE DOCTOR

Should the eye-strain be unsuspected, other circumstances ought to put one on the " right scent " for the condition, such as, for instance, curious habits of holding a book when reading, difficulty in threading needles, or a wrinkled forehead, twisted neck, and stooped shoulders. Headaches associated with these symptoms need a specialist's care, for here and now, above all other times, delays are dangerous.

Headache of Anæmia.

Headaches are not uncommon in girls from ten to fourteen years of age who are being " pushed " at school, " skipping " grades, reaching high percentages. They come with a sore, pressing pain in the forehead or on the top and back of the head. They are attended by loss of appetite, loss of sleep, and sometimes a habit of nervous twitching. These betoken " anæmia,"

or impoverished blood, for which the physician must be consulted immediately. Any delay in seeking medical aid may result in permanent physical and mental breakdown.

Pallor of Anæmia.

The headache of an anæmic girl is usually accompanied with a pale and puffy face, this proving the condition of the blood beyond doubt; the membrane of the lips, the eyelids, the gums, and the finger-nails will likewise be so pale at times as to show absolute loss of color.

Such a child tires easily, grows "winded," is short of breath after slight exertion. A brisk run out-of-doors may bring her home showing cheeks slightly pink, but this improvement is short-lived, and after half an hour in the house she is colorless again.

A continuous pallor like this requires

the doctor's attention, for there are deep-lying causes of anæmia,—*i.e.*, fatigue, tuberculosis, kidney disease, heart disease—that can be determined only by the physician.

Pallor in the Underfed Child.

The pallor of anæmia is waxy in its hue. We see in every schoolroom, however, the pale and sallow child, the result of underfeeding. This child is usually below standard weight and is nervous and restless.

For such as these the experiment of the school lunch is in progress to-day in the crowded districts of our large cities. Careful records of such children, taken at the beginning and end of their school term, show individual gains in weight, with uniformly better health. Pale cheeks grow rosy, almost plump, and spirits grow contented.

CHAPTER VIII

SKIN ERUPTION

Skin Eruptions.

WE HAVE not only the problem of the pale-faced child, but that of the face (and skin, in general) that is "broken out." The number of skin eruptions is legion, whether they be pimples or "papules," patches or "crusts," blisters, boils, or rashes.

Less than one hundred years ago all skin diseases were supposed to be of constitutional origin, or to arise, as said commonly, "from the blood." Many of them were called "humors of the blood"! To-day we know that many of the commonest skin eruptions are due to germs or parasites that thrive easily because skins are neglected or are positively unclean. Such eruptions are con-

tagious, and children suffering therefrom must be excluded from school until they are pronounced " cured," either by the school or family doctor or the extra-vigilant school nurse.

Likewise the non-contagious skin diseases require medical care. The doctor must be called upon to determine the true cause of a skin eruption of this nature. The cheap and poor soaps, the freely advertised salves or ointments, washes or lotions, that are applied often without the doctor's advice, but serve to aggravate and irritate, rather than cure, an already troublesome eruption.

How to Distinguish Eczemas.

In the case of the school child, is it possible for the mother or the teacher to decide whether an eruption be contagious or not? For instance, a long-standing eczema may be due to improper diet or to chronic constipation

or it may be associated with rheumatism and gout. On the other hand, eczema may be due to the irritation caused by head-lice, in which case it is communicable. In both cases the eruption is similar. There will be the small red pimples or "papules" that tend to "run together" or coalesce. These become moist or "weeping," and continue so for a short time. Later these moist patches grow partially dry and appear as dirty-brown crusts. Intense itching is present always, and the consequent scratching of the skin produces new pimples, more weeping, more crusts.

When the eczema arises from the irritation produced by head-lice, the eggs or "nits" can be found in the head. They are very small, silvery white in color, and stick persistently to the individual hairs, being immovable even with vigorous brushing.

FOR THE DOCTOR

How to Distinguish between Eczema and Itch.

Again, it is sometimes difficult to distinguish an attack of eczema from "the itch," the latter being one of the most contagious of all skin diseases. It is more frequent among the school children recruited from the ranks of the poor, the crowded and the immigrant population. It is caused by the burrowing into and under the skin of the itch-mite, which small parasite prefers certain parts of the body to others, notably the palms, the webs of the fingers, the wrists, ankles, spaces between the toes, the soles of the feet, the armpits, and the buttocks.

The intense irritation produced by the mite gives rise to the inflamed pimples that may unite into small groups like the weeping papules of eczema. How is it possible to distinguish between the two?

Upon close inspection, scabies can be recognized, beyond all doubt, by the small brown-black "zigzag" line or furrow (from an eighth to a half inch in length),—the "track" of the itch-mite. Furthermore, there will no doubt be found more than one member of the family suffering from the disease. It is needless to say that constant medical treatment is the only means of cure for this contagious skin affection.

How to Distinguish Eczema of the Scalp from Ringworm of the Scalp.

To the inexperienced care-taker some confusion may result from a slight resemblance between eczema of the scalp and ringworm of the scalp. The latter begins as a small pimple around a hair, but grows into a circular patch. The spreading takes place at the outer border or "circumference" to such an extent that the patch may be two inches

in diameter. Several rings occur close to each other. The hairs within the patch become brittle and break, leaving " stumps " of broken hair pointing in all directions. As these stumps fall out, there will be bald patches all over the scalp.

In eczema of the scalp there are the beginning papules with many circular crusts. After these fall away, however, we find neither the separate ring-like patches of baldness nor the broken hair stumps. In either condition, whether eczema or ringworm, faithful and persistent medical care is demanded absolutely.

How to Distinguish between Ringworm of the Scalp and Favus.

Another contagious scalp disease, known as favus, bears a resemblance to ringworm. In truth, it is known otherwise as " crusted ringworm." Here,

however, instead of the scaly patches increasing at the circumference, they " heap " or pile upon each other, forming deep cups of sulphur-yellow color.

If medical advice is not followed strictly, these cups will cover the entire scalp in disgusting moist masses. Because these destroy entirely the roots of the hairs, permanent baldness is a frequent result of favus.

Nettle-rash.

Of the non-contagious skin eruptions, one, that puzzles the doctor quite as often as the mother, is nettle-rash, or " urticaria." It occurs often, among children, in the form of inflamed red pimples, the tops of which become covered with thin crusts or " scabs." They itch severely, and, upon scratching the skin, those portions that are not " broken out " into pimples " swell up " into pink spots, or " splotches," called

" wheals." If scratching is controlled, these pink wheals fade and disappear, sometimes as suddenly as they came.

Nettle-rash, called also " hives," may be the result of indigestion. The eating of certain articles of food—*i.e.*, oatmeal, buckwheat, pork, strawberries—is followed invariably, in some children, by a sudden attack of " hives."

In other children an eruption of " hives " is caused by certain drugs, such as quinine, belladonna, and antipyrine.

Because of these facts, no outbreak of urticaria is to be regarded carelessly. The investigation of its cause, as well as the directions for its treatment, must be the duty of the physician.

Scaling of the Skin.

" Scaling " of the skin is a condition that will often bring a question from the mother. There is one form of ec-

zema that is accompanied by a constant tendency to " scale," instead of exhibiting the usual pimples and ugly pustules.

The scales of this form of the disease are a dirty yellow in color. They are found usually at the back of the neck, where possibly the first outbreak of the eruption may have been caused by the rubbing of a neck band or of a collar; or they are found upon the outermost side of the legs and arms,—at the line of the top of the shoe, for instance,—or near the elbow. The scales are accompanied by a persistent uncontrollable itching, and, though they seem perfectly dry, if they are scratched or rubbed, there comes a decided moist oozing upon the skin where the scales are rubbed away. This is the so-called " wet-tetter " of the days of our forebears. Of course, such a condition needs the doctor's advice, instead of the

home experiments with endless salves and "washes" and impure soaps. In addition there will be doubtless the underlying cause of a rheumatic tendency or rhachitis or "scrofula," which the physician must at the same time take into consideration in his treatment of the eruption.

Scaling after Fever.

In ordinary severe scarlet-fever, at the end of the first week of the disease, there begins the well-marked scaling peculiar to this condition. Wherever the eruption appeared this scaling takes place. From the hands and feet it is so complete and thorough—this shedding of the skin—that it appears as though almost perfect moulds or casts fell away; in the hands this scaling comes often as a glove-finger might roll off. From the feet almost stocking-like moulds are seen.

In very mild attacks the scaling will be less pronounced, although it exists. Here it will be discovered in thin "plaques," or large flakes of dry skin, or in long strips. It may occur over and over again while a child is convalescing, so that he finds a never-ending fund of curiosity in pulling off these strips and patches of "old clothes," as it were. Even in the mildest form of scarlet fever it is present. We know of children who were allowed to attend school throughout a light attack of the disease, in whom the condition had never been discovered, had not a sharp-sighted teacher found slight scaling near the child's elbow-joint.

Again the eruption of scarlet fever may be so indistinct as to show a half-way resemblance to that of measles. If in the course of ten days or two weeks there follows an unexplainable attack of rheumatism, or an attack of dropsy,

or a foul and "running" ear, let the mother or nurse look carefully for some traces of scaling or peeling. It will doubtless be found, and the nature of the attack will be at once made clear.

It is worth while just here to make the statement that as long as such peeling or scaling persists, scarlet fever remains actively contagious. Moreover, these facts explain why the contagion of scarlet fever is so lasting,—why it may be transmitted after the lapse of years, in fact. More than once, dresses or underwear have been stored or packed in drawers, chests, or trunks without thorough fumigation after an attack of scarlet fever, and the germs or microbes have remained in the small flakes or particles of skin adhering to these garments. Carpets, rugs, bedding, and floors upon which the scales have fallen and adhered are likewise

active avenues of contagion unless they are thoroughly steamed or fumigated.

Scaling in Measles.

When the eruption in measles is especially pronounced, there may follow a slight amount of scaling, but it will not appear as strips or flakes or patches or "moulds" as in scarlet fever. Instead it will resemble more closely what one observer described as "fine branny dust." This soon disappears entirely.

Scaling from the Scalp.

Among children we find an occasional scaling from the scalp known ordinarily as "dandruff." When it exists, the scales are usually small, most of them pin-head in size, sometimes trifflingly larger; they are gray-white in color and are flat. Sometimes dandruff may be so profuse as to be a dry powdery mass through the hair, instead of

distinctly scaly. If abundant, it is apt to cause itching. In that case there will be a disagreeable suspicion of its being far worse than dandruff. How is it possible to distinguish between the smallest scales of dandruff and the disgusting nits of head-lice? By one simple distinction,—namely, the dandruff scales can be removed from the hair and the scalp by vigorous brushing, whereas the nits hold fast to the individual hairs, sticking " closer than a brother "!

What is Dandruff?

Dandruff is a collection of scales of dead skin from the scalp and the natural oily or fatty matter of the hair. Ordinarily, if the skin of the scalp is kept clean and the hair is kept well aired and well brushed (not severely brushed), these scales do not accumulate. If there is a constant tendency for such a thing to occur, in spite of

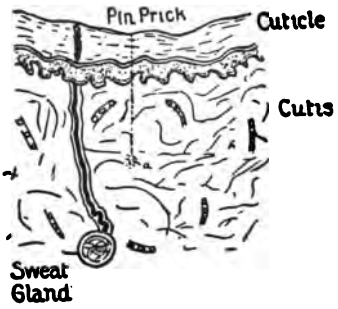
scrupulous cleanliness, then the doctor or " skin specialist " must be consulted.

Boils.

A common source of infection of the skin among children is that of the " boil." In former times we talked of a " crop of boils " and looked upon them as proof that for some reason " the blood was out of order." Because of this belief, doses of " spring medicine " were given and taken annually to forestall the invasion of a year's new crop.

To-day we know that the boil is caused by the entrance of a germ into the skin. This takes place first in the skin surrounding one of the " follicles," or tubes of a hair, in any part of the body. The first sign of the unwelcome intruder will be a slight tingling or itching of the skin; next appears a red pimple raised above the surface and sensitive to the touch. The skin sur-

Fig 9. *A*



A shows structure of healthy skin before irritated by pin prick or entrance of "dirt" germs of any nature.

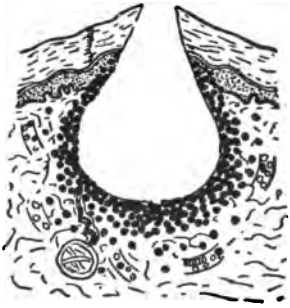
Fig. 9, *B*

B shows germs resulting from injury.

Fig. 9, *C*

C shows the growth of "core" of a boil.

Fig. 9, *D*



D shows core changed to pus or matter draining through first site of old pin prick.

rounding this grows hard, swollen, and bright, rather fiery red, while the boil itself—*i.e.*, the original pimple—becomes duller in color. The pain is now throbbing instead of tingling, showing "pus" is forming, and, because it is confined within a small space, is making pressure all around upon the small and delicate nerves of the skin.

The best and proper thing to do is to allow the doctor to "lance" the boil at the first sign of pus. This will make it possible for him to dislodge the so-called "core," which is a greenish-yellow mass of matter at the centre of the boil, extending down into the deeper skin. It is almost impossible to describe the relief of pain and swelling that follows this method of procedure.

If, however, according to old-time ideas, the boil be poulticed till it is thought "ripe" for lancing, as it grows larger and softer so will infection spread deeper, and there will be not

only the familiar "crop of boils," but a possible undermining of the general health. This will arise from the loss of appetite, of flesh, and of sleep that continued pain and suppuration produce.

The germ that causes the first irritation within the hair-sac may be carried by the finger-nail that is not kept carefully cleaned. An eruption of eczema, that causes intense itching, or head-lice, in fact, anything that brings about the constant scratching of the skin, is very frequently followed by a crop of boils.

Skins that are kept clean by a thorough daily application of soap and hot water, and nails and hair that are kept clean, are all a good "insurance" and safeguard against most of the non-febrile skin eruptions. If cleanliness is next to godliness, it must come before good health.

FOR THE DOCTOR

CHAPTER IX

CONTAGIOUS FEBRILE DISEASES

Acute Epidemic Infectious Diseases with Skin Eruptions or "Rashes."

CERTAIN diseases that are highly contagious occur as "epidemics" and are characterized by eruptions of the skin. Why are they classed as infectious and epidemic?

An infectious disease is one that is caused by the entrance and growth, or "multiplication," within the body of "micro-organisms,"—*i.e.*, small bodies or "germs." These grow rapidly, and accomplish, at one and the same time, two things,—(1) the making of a "virus" or poison, and (2) the destruction of the tissues of the larger body within which they grow.

Such destruction is seen in the film

or patch on the tonsils in diphtheria, in the discharge from the nose and ear in scarlet fever and measles, in the sputum, or spit, from the lungs in pneumonia and tuberculosis, in the discharge from the bowels in typhoid fever. The "virus" or poison at the same time causes the fever and the loss of strength that mark the disease. The "discharges," mentioned above, carry the poison, which lodges in clothing, bedding, books, furniture, and wall-paper; and in this manner new surroundings and different individuals become infected, only to repeat the process and spread infection. In this way diseases become "epidemic."

Again, the discharges may be communicated through a common water supply or by means of a careless sewer system. Epidemics of typhoid fever arise thus. Insects and vermin also serve as carriers of infection. The germs of malaria are carried by the

mosquito; those of relapsing fever, by the bedbug; fleas are responsible for carrying contagion, and the common house-fly is the worst mischief-maker.

All infectious diseases have a "period of incubation." By this we mean the time that elapses between the exposure of the human body to the microbe or germ and the first appearance of the symptoms of the disease, the symptoms being the result of the rapid multiplication of the microbes. A German investigator found that one and a half million diphtheria microbes, introduced into the blood of the body, became in six hours sixty millions, in nine hours five hundred millions, and in twenty-four hours eleven hundred millions.

The "period of incubation" varies for different infectious diseases, and, because "new cases" are apt to arise at any time during this interval, a "period of quarantine" is essential for the

protection of others against disease. By this we mean the length of time during which well people, exposed to any infection, must be isolated lest they carry the living germ to other individuals.

For convenience we give the period of incubation and period of quarantine in the form of a "table," with acknowledgments to "Personal Hygiene" (Walter L. Pyle), and "Diseases of Infancy and Childhood" (L. Emmett Holt):

Disease.	Period of Incubation.	Period of Quarantine.
Small-pox	8 to 14 days	14 to 21 days
Chicken-pox	4 to 14 days	14 to 21 days
Measles	10 to 16 days	10 to 21 days
German measles	5 to 21 days	14 to 21 days
Scarlet fever	2 to 7 days	14 to 21 days
Diphtheria	3 to 5 days	14 days
Mumps	10 to 15 days	14 to 21 days
Whooping-cough	7 to 14 days	14 days
Pneumonia	1 to 3 days	1 to 7 days

It ought to be unnecessary, even in such a book as this, to counsel that every instance of these acute eruptive

diseases must have the doctor's immediate attention. Nevertheless such counsel is needed, for it is common custom to avoid sending for the doctor if a child is thought to have a "light case of measles." This is not wise, or safe, because of certain serious after-effects that may follow measles, chief among them being tuberculosis.

How Recognize Measles?

We have previously described the warning symptoms of measles (which see), that appear three or four days before any eruption or "rash" is expected. When this does appear, at the beginning of the fourth day, it comes in small dark-red points resembling flea-bites, behind the ears, on the forehead, the face, the neck, the chest, and the back. Three days later, by the time the rash is found upon legs and arms, it has begun to fade from the face.

In the majority of instances the

"rash" is the signal for the doctor's first visit. This is a mistake, because measles is most contagious during its first three or four days, when the "cold," or catarrh of nose, eyes, and ears, is at its height. Should there be a delay in calling the doctor, make the child comfortable in bed in a room at a temperature of 68° to 70° Fahrenheit, well ventilated with pure air, and with very little light if the eyes are sensitive to light. Avoid bed-covering that is too heavy. Give the child a light diet of milk, or of food prepared with milk, or of gruels. For the fever and thirst give abundance of pure water to drink, or lemonade or orange-juice not too sweet, and regulate the bowels daily. Other directions than these must be by the advice of the doctor.

German Measles.

During an epidemic of "true" measles it is a common occurrence for

a child, who has gone to bed apparently well, to awake in the morning profusely covered with pale-red spots, paler than those of measles and slightly darker than scarlet fever. Sometimes the spots will have "run together" into good-sized blotches upon the face. These spots, when separate, feel like shot under the skin. This is "German" measles.

The child is usually never very sick with such an attack. In fact the symptoms are so slight that a careful mother need not send for the doctor if she is sure that it is German measles and not a mild scarlatina—that being the only dangerous question. An almost certain feature to help her in her decision will be the existence of the swollen, painful "kernels," or glands back of the neck, behind the ear. These are not enlarged or tender in scarlet fever.

The disease is contagious and must exclude the child from school for about

three weeks. He must be kept within doors, in a well-aired room of even temperature. The bowels must be regulated, and the food must be light, no meat or pastry given for three or four days. If the rash has disappeared and the glands become small or painless at the end of the first week, the child may be allowed to go down-stairs and resume his usual play. After three weeks he may be sent again to school.

Scarlet Fever.

Of these eruptive fevers scarlatina is the most dangerous, and fortunately the easiest to distinguish. The mildest "case" of scarlet fever must have the doctor's attention from the first, even though it is difficult to believe that such a statement is needed here. The writer has personal memories of a teacher in one of the public schools of new York City who contracted scarlet fever, proving almost fatal to her, from two small

Italian sisters. They spent their time out of school hours in flower making, and, because quarantine might cut the family income considerably, their attack of scarlet fever was not only not reported to the doctor, but they were sent to school throughout the disease. As it was a mild case, it was undiscovered until scaling or "desquamation" of the skin occurred. They were at once excluded from further school attendance, although this was too late to prevent the spread of infection.

We are familiar by this time with the introductory or premonitory signs of scarlet fever (which see),—*i.e.*, a fever so high that the skin is burning to the touch, an intense sore throat, with vomiting and convulsions. The sudden vomiting and the throat condition must be the signals calling in the doctor, even though there may be no sign of rash. This appears within twelve to thirty-six hours after the child is stricken, and

is found first upon the neck and chest. It appears to be made up of very small bright-red "points," that disappear if pressure is made upon them. In mild attacks no rash appears on the face. As it covers the body, the parts that are covered most thickly are the groin and armpits and the buttocks.

A distinguishing feature of scarlet fever is the so-called "strawberry tongue." The little elevations or points seen always on the healthy tongue become swollen and extremely red; at the same time there exists a thick white "fur" or coating; the red points showing through this give the appearance, and therefore the name, of "strawberry tongue."

Many rashes resemble that of scarlatina, among them nettle-rash and the drug eruptions already described; but in none of these is there found the abrupt onset, nor the peculiar condition of scaling that always terminates the

Chicken-pox. Third day of eruption. Baby 4 months.

disease. It is during this stage of peeling that scarlatina is most actively contagious.

Scarlet fever is dreaded as much for its after-effects as for any of its acute symptoms. These are infections of the ears, of the joints, and acute inflammation of the kidneys. The resulting ear trouble is so serious that one eminent medical authority has collected statistics of over five thousand deaf-mutes, of whom nearly six hundred owed their condition to scarlet fever. Another authority has found that from 6 to 10 per cent. of the children attacked with scarlatina developed an acute Bright's disease that was not readily curable.

Chicken-pox.

Chicken-pox is also one of the milder eruptive fevers of childhood. Here, as in German measles, it is apt to take a household by surprise with its sudden coming. The child may be a little

drowsy and may have an apparently fresh cold for a day or two. Upon waking in the morning he will show, over the face, through the hair, and scattered irregularly over the body, small rose-colored pimples. In four hours' time the pimples look like small blisters filled with clear fluid. By this time, if the mother hears that an epidemic of chicken-pox is " skirting " the neighborhood here and there, she will realize the nature of the eruption. By the third day the " clear fluid " will appear milky, and a few hours later the pimples become covered with a yellow crust or " scab." Five days later most of these crusts or scabs disappear, sometimes leaving only faint scars in their wake.

Chicken-pox, though by no means serious, ranks next to measles in the ease with which it is " carried " or communicated. For this reason a child suffering from it must be kept out of school

from two to three weeks after all the crusts have disappeared.

If the mother is careful, she need not send for the doctor. The child must be kept in bed for three or four days, and in the room for a week. Orange-juice or not too sweet lemonade, if there be a little feverish thirst, may be given, avoiding meat, fats, and pastry.

Chicken-pox and German measles are the two diseases to which most children do not object. Lasting as they do for but a few days, the child is not sick enough to need disagreeable medication, but just enough to need a little special care and "coddling," with a tiny vacation from school.

Mumps.

Mumps is a disease not in such esteem among children as the two diseases previously described, because of the actual pain that accompanies it.

There are in all individuals two

glands rather larger than those described usually as kernels, one on either side of the neck, in *front* of and *below* the ear. They are the parotid glands. They are subject during the later years of childhood and youth to infection. This is called parotitis—in ordinary language, mumps.

For a few days before they become infected and inflamed, the child will say complainingly many times a day, "I feel so sick." He may be slightly feverish and inclined to vomit; if, after an attack of vomiting, eating is attempted, he will complain of "shooting" pain below the lobe of one ear. It is the pain which first calls attention to a deep-seated swelling of the gland just described. The swelling may be slight, or it may be so great as to extend to the face and neck, causing the head to be held stiffly or to be drawn toward the affected side. When very large, it

Mumps.

gives a "foolish" expression to the face, making any one but the patient inclined to smile. He, however, is far from smiling, for the pain may be so great that he will be unable to chew or swallow.

Both sides of the face are attacked, as a rule, though there is usually an intermission of from three to seven days between the development on the two sides.

"Mumps" is a contagious disease, and a child must therefore be kept out of school until he is entirely well. In ordinary attacks the doctor need not be sent for if the mother will keep the child in bed for a day or two, and within the house until all swelling has disappeared. The bowels must be kept open and liquid food only given,—milk, beaten eggs, and broths, for instance.

In boys and girls who are developing—*i.e.*, from the ages of 13 to 16—

an attack of mumps may be more troublesome, in boys the infection going from the parotid glands to the testicles; in girls, from the glands to the breasts or the ovaries. Should this occur, it may mean a real illness of a fortnight's duration, and it must in such cases have the doctor's careful attention.

An after-effect very different from the above may at times develop,—*i.e.*, deafness. An English physician has tabulated at least forty instances in which mumps resulted in permanent deafness, due to the travelling of the infection to the auditory nerve (the special nerve of the ear), which is found so near the parotid gland. The writer has seen at least one such result in which an attractive fifteen-year-old girl had become a total deaf-mute.

FOR THE DOCTOR

CHAPTER X

CONTAGIOUS DISEASES OF THE EYE

Other Infections and Epidemics.

OTHER epidemics than those of the eruptive febrile diseases and other avenues of infection spread trouble among children. Among these, certain affections of the eyes are highly contagious and call for scrupulous care.

Epidemic Pink-eye.

Epidemic pink-eye may spread through the class-room like wildfire in the spring and fall of the year. It is attended with swollen or reddened lids, a pinkish-red eyeball, and considerable discharge that flows over the cheeks in tears. During the day the child will complain that the light hurts the eyes. At night the discharge will " glue " the

corners of the eyelids firmly together, and it may take half an hour of " coaxing " and cleaning in the morning to persuade the eye to open for the day.

Mode of Infection.

The infection is spread by the use of the common wash-basin, the public towel, and the travelling handkerchief that may do more than their proper share of duty.

All children affected with pink-eye must be excluded from school, and must not be allowed to return until the doctor or the school nurse is willing to give a " clean bill of health." To stop the spread of infection, the individual wash-cloth, handkerchief, and towel must be insisted upon, at home as well as at school.

Gonorrhœal Conjunctivitis or Ophthalmia.

There is an infection of the eye, not uncommon in new-born babies, that is

highly contagious and attended with great danger. It shows itself within three days after birth, in much-swollen eyelids and profuse yellow "matter" or discharge from the eyes.

At the moment of its discovery the doctor must be notified; everything that comes in contact with the baby's eyes must be disinfected,—the nurse's hands, the mother's hands, the doctor's hands. All cloths and cotton lint used for cleaning must be burned without delay. Should the condition be neglected, blindness may occur. Before the infectious nature of this inflammation of the eye was discovered, the resulting blindness was so common that thirty out of every hundred blind adults traced their blindness to this cause at birth.

Occasionally, because of vice and low living in crowded tenement districts, the eyes of older children become infected in a similar manner. Should this

happen, such children must be excluded from school and be " followed up " for rigorous treatment, either by the family physician, a dispensary doctor, or the school nurse.

Trachoma.

Among the children of very recently arrived immigrants trachoma is found. This is highly contagious, and, if not treated medically, will result in blindness. Eyes infected with this treacherous disease discharge thick yellow " pus " or matter. In addition, there will be found, in the little folds of the lids, row upon row of gray-white grains, like sago in appearance, or, according to another authority, frog-spawn. As the lids heal, these rows contract into deep scars along the lids, sometimes narrowing the latter into mere narrow ugly slits, through which

the eyes seem to peer, giving an almost sly or sinister expression.

A child afflicted with trachoma must be kept out of school until all suspicion of discharge is removed. So contagious is trachoma that the United States Government is giving aid in stamping out this evil by isolating all immigrants suffering therefrom in the Government Hospital on Ellis Island in New York Harbor.

PART II

SIMPLE AND SERIOUS NERVE DISORDERS

CHAPTER XI

NERVOUS DISEASES

Nervous Diseases of Children.

WHAT ARE the signs of nervous diseases among children? Are they readily detected? Are they serious in themselves? Do they point to serious conditions always? Of one thing let us make sure at the start. Any and all symptoms of nervousness must be reported at once to the doctor, because he is the judge of their importance. Of one other let us be equally careful: That very young children be kept quiet, that all excitement be avoided, that noisy amusements and romping at evening be absolutely prohibited.

If a child does not sleep or rest well, it must be trained into habits of sleep, as well as trained into habits of exercise. It should be taught to expect be-

ing put into crib or cradle alone, and then to go to sleep without coaxing or rocking, or walking, or, again, as once before prohibited, without sucking the rubber nipple and ring known as the "pacifier." There ought to be no nursing between eleven or twelve o'clock at night and four o'clock in the morning. After a baby is five months old there should be no nursing between ten o'clock at night and six or seven o'clock in the morning.

A child's nervous system grows with great rapidity. It shows greater changes in small intervals of time than any other part of his body. It needs to do so to fit him into or to let him become a part of the new world around him. A new noise or sound, a new face, a new color, a new toy, for each of these he must be ready. Because of this the nervous system is constantly having to "adjust" or fit itself into the new impression. Hence we call it un-

stable or unsteady. This explains why slight causes make great impressions upon a child's nervous system. For instance, a mild attack of indigestion may excite a severe convulsion, so also may the presence of worms in the bowel.

A slight amount of eye-strain, or an adenoid of moderate size, or impacted teeth—any of these may be the cause of a troublesome attack of St. Vitus's dance. Let us understand, therefore, that "nervousness" does not always arise from deep-rooted or hopeless disease of the central nervous system in itself.

Convulsions.

Few illnesses of childhood alarm a mother more than the first attack of convulsions she may have to witness. Nevertheless, they do not always presage alarming disease. No matter what their cause, if once seen, they are always dreaded. Slight twitching of the muscles of the face, the eye-lids, the

hands and feet may give a merciful warning of what is to follow. Occasionally this does not happen, and, instead, the convulsion may come upon a child in perfect health, like a lightning bolt, with pitiful rolling of the eyes, hard jerking and twitching of all the muscles of the body; the face distorted in its expression, the saliva flowing or frothing from the mouth; the fists tightly closed; arms and feet are bent and stiff. The breathing becomes shallow; the lips almost blue, and the forehead wet with perspiration. Although these last but a few minutes really, the time drags for the mother, and she is easily wont to think the convulsions "lasted for half an hour," as she tells the doctor. As the attack subsides, the child probably falls into a stupor that may pass into sound and comfortable sleep, from which he may awake as though nothing unusual had happened. On the other hand, a first

attack may be followed by others, and, no matter how trivial the cause is found to be, the fact remains that the nervous system once upset by so slight a thing is in itself unsteady. How may we determine the cause of the convulsion?

Indigestion.

If, in infancy, it arises from indigestion, there will be a history of improper feeding; obstinate constipation may have preceded the attack; an outburst of temper and wrath from mother or wet-nurse prior to nursing may be the cause.

Scarlet Fever and Pneumonia.

We have spoken before of the convulsions that usher in scarlet fever and pneumonia. In the former, intensely sore throat and vomiting, in addition to the convulsion, will be the danger signals. If a severe chill that shakes

the body from head to foot precedes or follows the convulsion, pneumonia is doubtless threatened.

Acute Meningitis and Cerebrospinal Meningitis.

The convulsions that introduce acute meningitis are attended by high fever and the "projectile" vomiting already described (which see). Moreover, the convulsion is apt to be limited to one side of the body, a fact to be always remembered. These are the convulsions that are so frequently followed by sudden paralysis of different parts of the body,—of one arm, or of one leg or foot.

What to do for Relief of Convulsions.

In older children convulsions may be epileptic in nature. If this is true, they are preceded by a peculiar moaning cry, by a fall, or by a ringing in the ears. During the convulsion the tongue will

Lowering infant into bath. Tub covered with a towel to hide water from a nervous child.

be bitten, and the ordinary froth at the mouth will be streaked slightly with blood. Rickety children are apt to have convulsions.

Whatever the cause for the convulsions, the treatment must be prompt. Let the child be stripped and laid upon a blanket, at the same time covering the entire trunk with a large towel or small sheet dipped in mustard water prepared by mixing one tablespoonful of ground mustard with one quart of tepid water. After wrapping the towel or sheet around the body, wrap the child in the blanket upon which it has been lying and let it be undisturbed for fifteen minutes. All treatment must be directed by the physician, who must remain until the convulsion has entirely ceased.

"Fits" or Epilepsy.

Convulsions of infancy sometimes become the more chronic epileptic at-

tacks or " fits " of later childhood, especially if there be a trace of nervous inheritance from any member of the child's family. One authority tells us that in one-third of the children who are " subject to fits " there is a family history of epilepsy or insanity. Although this is true, some fresh cause is found in almost every instance, as fright or great excitement, a blow or a fall on the head.

The " fit " consists of hard convulsions lasting sometimes fifteen minutes, during which time the child grows unconscious. There is apt to be a warning of the fit. It may be a chill all over the body or a feeling of faintness, sometimes a ringing in the ears, or flashes of light before the eyes. During the fit the face grows pale, eyes staring with wide-open pupils, and, as the convulsion reaches its worst, the child falls to the floor, or to the ground, with a little hoarse cry.

There is frothing at the mouth which is streaked with blood, caused by the biting of the tongue, as the teeth are working and clenched. After the convulsion is over, the child is apt to drop into a sound sleep lasting for an hour or more. On awakening he will complain of a headache.

When fits occur during the night, if the child sleeps alone or in a separate room, he may have several attacks without the knowledge of the mother or nurse. In this case, if she finds blood upon the pillows (from the bitten tongue) and the child complains of severe headache in the morning, she must be on her guard for the true nature of these nightly attacks.

"Spells."

At times a child may have "spells," or attacks in which he will tell you that for a few minutes he has been very "dizzy," or that he felt very "weak"

(this in reality amounting to a momentary fainting). If he is watched at any time through such a "spell," he is found to be unconscious. This, taken with the fact that such attacks recur at seemingly regular times, will stamp them as mild epileptic seizures. Despite this, they indicate a condition of the child's nervous system serious enough to be brought at once to the doctor's attention.

For the more severe form of the seizures nothing can be done to "cut short" an attack. Simply make the child comfortable by loosening the clothing about the neck, waist, and wrists, and place him upon his back with his head slightly raised on a soft pillow. In addition, take the precaution of putting a spool or cork, or clothes-pin, between the teeth, to prevent, as far as possible, the biting of the tongue. Doctor Emmett Holt de-

clares that "an epileptic child should never be without an attendant or companion."

The doctor's work in epilepsy is to discover and remove, if possible, the cause of the disease. Unless this is done, there is no "magic cure" for the condition.

Night Terrors.

A child that has gone quietly to sleep, apparently well, may, after an hour or two, suddenly awake with a scream that frightens the entire household. His fright may be so great that he will recognize neither mother nor nurse. If asked to tell of the thing that has made him afraid, he may point to a (supposed) object under the bed, or in a corner of the room. After a little comforting, the child may sob himself to sleep in his mother's arms, and the remainder of the night may

be undisturbed. Sometimes such a condition will recur nightly and at the same hour for two weeks at a time; or months may pass without a similar occurrence.

Such a child and such attacks must be treated with gentleness and forbearance. He must not be made to sleep alone, but be allowed to have his crib beside the bed of the nurse or mother.

Should attacks be frequent, the doctor's attention must be called thereto,—for there may be a hidden cause responsible for them, which only he can discover. More than one medical authority declares that, as the child with night terrors grows older, they are replaced by attacks of epilepsy.

St. Vitus's Dance (Chorea).

A child who is considered merely "nervous," or irritable, may develop

what appears to be a "habit" of dropping things,—his books, pencils, or, at table, his knife or fork, or glass of milk. He may fumble badly at buttoning his clothes or lacing his shoes, for all of which he is most apt to be scolded.

This is a mistake, for a child showing these signs is probably developing an attack of St. Vitus's dance, a troublesome nervous disease of childhood. If he is not taken to the doctor as these symptoms show themselves, he becomes gradually worse.

By degrees all the muscles of the body become affected: those of the face—when he may be chided for "making faces," those of the hands, arms, legs and feet; when the disease is at its height, these are in almost constant motion, jerking and twitching irregularly, and are made worse by any attempt to stop them.

A child showing the slightest ten-

dency to St. Vitus's dance must be taken out of school at once, and put under careful medical supervision. He must not be scolded or ridiculed because of the uncontrollable movements; and, though one attack may be cured with comparative ease, the mother must be on her guard for the repetition of the trouble at any time that overstrung nerves or childish over-anxiety may get "the upper hand."

Hysteria.

An outbreak of hysteria in a child may resemble St. Vitus's dance. Hysteria may mimic any really serious disorder. How then is a mother to know the difference between an hysterical outbreak and the real St. Vitus's dance? The twitching or tremors of hysteria are more regular; they do not last for any great length of time, as in "chorea"; they end abruptly; at times

they show a remarkable tendency to improvement or even actual disappearance if but little attention or sympathy is given to them.

Habit Spasms.

Some nervous children have a tendency to the development of certain "habit" spasms, and these may resemble at times the beginning of St. Vitus's dance. Let us remember this difference, however,—that a habit spasm affects only one set or group of muscles, as in the blinking of the eye, frowning of the forehead, nodding of the head, or shrugging of the shoulders, while in chorea different muscles of the body are jerking in irregular motions at one and the same time.

Annoying as these habits are, punishment does not correct them. A child so affected must have the doctor's advice and careful patient attention.

PART III

SOME HABITS OF CHILDHOOD

CHAPTER XII

CERTAIN NERVOUS HABITS

Enuresis (Incontinence or Bed-wetting).

WE MAY include this condition rightfully among the "nervous disorders" of childhood, for such it is, at least occasionally. At other times it goes in company with the nervous conditions we have described above.

Sometimes an irritated condition of other near-by organs may cause bed-wetting, as pinworms in the lower bowel, or a long or exceptionally tight foreskin. Sometimes actual disease of the bladder itself may be the existing reason, as a small "stone" in the bladder or very highly-acid urine.

The bed may be wet by night and the child's clothing by day.

The chief reasons for mentioning at

length the cause is to impress upon the child's care-taker that nothing but medical advice is to be thought of, if the child should be troubled with this condition. Punishment of any kind is useless. Even though, after the discovery and removal of any of the causes above enumerated, the disorder seems to have grown into a "habit," scolding will be ill-advised. Patience on the part of the mother or nurse and pride and cleanliness on the part of the child will, in connection with the doctor's management, secure better results than all whippings can accomplish.

Certain Habits of Infancy and Childhood.

It may not be amiss in this connection to speak a word of warning against particular habits that are encountered in infancy and childhood. As, for example, "sucking,"—*i.e.*, sucking of the thumb or finger, or of a rubber nipple.

Such habits are sometimes regarded as harmless, but the truth is they leave disastrous effects if not broken early. Deformity of the thumb or finger or of the lips and jaws is the result. The formation and growth of adenoids are encouraged. One authority (Emmett Holt) states that habitual sucking of one finger or hand may lead to spinal curvature. Worst of all, the habit of masturbation may be fostered by persistent sucking.

Masturbation or Self-Abuse.

The foundations for this habit are often laid in infancy or early childhood. On account of the seriousness of the practice if not discovered, it should be " nipped in the bud " if possible. Otherwise it may lead to a complication of physical and moral diseases.

We have known children of ten years of age who have been like " centres of

moral infection," because of teaching it to others and so spreading the habit through schools, public or private, through " reformatories," and asylums.

How shall a mother detect the first sign of the habit? In very young babies it is discovered in a frequent rubbing together of the thighs, sometimes by rubbing the body against a soft warm pillow.

Sometimes the child will simply lie upon the floor with the thighs crossed and rigidly held, and only a backward and forward motion of the body is made. This lasts for a few moments, and is accompanied with flushing of the face and a little excitement, followed finally by a " letting go," and afterward by perspiration.

If the child is in care of a nurse, her first suspicion of such a condition must be reported to the mother, who must herself make the doctor her first con-

fidant. It may be possible that some irritation is being produced by threadworms; or, in girl babies, a slight discharge from the tiny vagina, or middle passage; in boy babies, an over-tight foreskin. Should the doctor find any of these existing, it will be comparatively easy to break the evil habit. If none of these exist, the problem is more serious, and, in addition to the doctor's resources, calls for all the tact and patience and loving wisdom that the mother possesses.

Fatigue.

It has come to be a matter of common understanding that when we speak of being fatigued, or tired, we give perhaps our first attention to our muscles. Thus, finding we cannot walk a mile, or a block further, we at once say we are " tired," or, discovering that we cannot finish this or that task of the hands,

we call ourselves "too tired." As a matter of fact, however, the "nerve-centres" of the body are the first to know the effects of fatigue or weariness. Because they are tired first, they cannot whip up or spur up the muscles to brisker action. All this is seen vividly in the fatigue of exhaustion so prone to come upon the school-child of to-day. Shall we try to draw a picture of such? If we draw truthfully, we will find a head no longer erect on the shoulders, but drooping; we will see drooping eyelids, a face unsmiling, with perhaps open mouth; the face and lips are puffy and pale. The hands have lost color and grip, perhaps the fingers are twitching. So much for the bodily picture. What is the child's condition of mind? Restless, inattentive, and "fidgety,"—answering slowly if asked a question, moving slowly if ordered to do a thing, with a puzzling, sudden loss

of memory, a monotonous "tired" voice, finally a decided mental irritability, which "will be shown by saying or doing the wrong thing under the circumstances." Such a child will sleep poorly, perhaps talking, or even, at times, walking in his sleep.

What shall be done with this child? Shall he be punished because he does not "pay attention" in school, or because he is dropping behind his class, or because he cannot study at home, or because he takes no interest in things generally? No, the child needs first to be "rested," to be taken out of school, to be kept in the sun and the best air, and to be given the doctor's careful attention as to food, sleep, and exercise.

Should any or all of these measures be neglected, such a child may develop the hysteria of which we have already spoken, or an attack of St. Vitus's dance. Even a permanent break-down is a possible result of neglected fatigue.

PART IV

PHYSICAL AND MENTAL CAUSES OF RETARDATION

CHAPTER XIII

COMMON PHYSICAL DEFECTS

THERE is a realm in which the question, "When to send for the doctor?" is becoming increasingly important. It is a comparatively new field of medical and psychological investigation. It has been brought to notice recently by the studies of backward children in the public schools. Investigations made in thirty-one large cities in the United States show that about 33 per cent. of the 20,000,000 school-children are behind the grades they should be in for their age.

The causes for this condition are manifold and various. What all of them are no one knows. In general, however, we can say that the majority of causes are either physical or mental. When, therefore, a child does not make good progress in school, it is considered

a case for medical or psychological advice.

Nearly all the purely physical causes of backwardness are removable. An early and careful medical diagnosis will, therefore, save the child from much lagging in his school-work and the parents from useless worry. Such defects as adenoids, enlarged tonsils, poor eyesight, ear-ache and poor hearing, decayed and aching teeth, malnutrition, and many other physical conditions, formerly hardly noticed, will not only affect the learning ability of the child, but will also ofttimes make him a bad boy. A cross, peevish, irritable, stubborn child, who may steal, lie, and play truant, can often be changed into a model of good conduct by proper medical attention. These facts of modern-day science make it extremely important for both parents and teachers to know when to send for the doctor.

FOR THE DOCTOR

The children who cannot get along in school because of physical defects can usually be recovered from their backwardness by removing the defects. Unfortunately, there is another larger and increasing class of retarded children who can never be cured completely. They are suffering from some mental defect that shows itself not only in school but also in an inability to perform many simple acts of every-day life such as normal children do. In the United States to-day there are from 150,000 to 300,000 such children. If the parents could only understand early enough that something seriously was wrong with children of this type and would take them for an early examination by a specialist, many of them could be educated from a state of helplessness to a state of self-support.

For such a result the child should be examined in infancy. This should be

done by a specialist. For the treatment should begin early and should be carried out in the proper way. *Neglect will injure such a child. Bad training will injure such a child.* Many a pitiful case comes to the attention of the specialist where the best-intentioned efforts of the parents have caused only injury to their poor child. How infinitely better it would have been for all concerned if the parents had known "when to send for the psychologist!"

What is true for the parents is equally true for the teacher. It is estimated that one-half of one per cent. of the total number of public-school children is mentally defective. Whether these data are precise or not, it still remains true that the public-school teacher, both in regular and special classes, meets frequently children who are retarded, and she must decide whether they are retarded from physical defects or from mental defects. In

other words, she must know enough at least about the condition of things to determine whether the child should be sent to a medical specialist or to a psychologist; and if it is not possible to send the child to a specialist, she preeminently must know enough of this class to decide on the pedagogical individual needs of the case. Otherwise she may by mistaken training inflict injury on the weakened intellect instead of improving it.

In the following pages we will give in the simplest way possible the signs of, first, those physical defects which should be called to the attention of a medical specialist; and, second, those which should lead the parent or teacher immediately to take the child to a mental specialist for a full examination.

NOTE.—For a complete discussion of this subject the reader is referred to The Conservation of the Child, by Arthur Holmes, 1912, J. B. Lippincott Co., Philadelphia; price, $1.25.

Of these purely physical defects we find defective hearing, defective vision, defective breathing, defective speech, defective teeth, defective posture, most often.

We are paying more attention to the conditions to-day because we are obliged to do so. Health in these days is regarded as a "civic obligation," or, in other words, a public duty; as much so as the cleanliness of a city's streets and the disposal of its garbage.

Value of Present-day Physical Examination.

Our school-children are expected to undergo quite as careful and frequent physical examinations and re-examinations as they were made formerly to pass in arithmetic and geography. Therefore it behooves us to have an intelligent idea of these common physical defects and to be able to recognize the first danger signals they throw out.

FOR THE DOCTOR

Within the last five years Dr. Leonard Ayres made an examination of 8300 school-children in New York City, from ten to fourteen years of age. Among them more than four hundred were found "dull," or retarded and backward in their grades. Three-fourths of the number were shown to possess poor vision, poor hearing, poor breathing, and poor teeth, and it was proved clearly that these very defects were largely the cause of their poor progress in school.

Defective Vision.

What are the signs of defective vision? They are numerous; among them being frequently occurring headaches, especially those accompanied with sick stomach and vomiting; also frequent styes; blurred vision; habits of winking and squinting; curious habits of holding a book when reading,

either more or less than nine inches from the eyes; a strained or worried expression when reading; stooped shoulders, with twisted head and neck; all arising from the effort to adjust or fit the eyes for the distance or object it tries to see. Even pronounced spinal curvature, with obstinate backache and neuralgia, may follow these tricks of adjusting if the cause be not discovered.

If the mother has not discovered that her child has poor vision before he goes to school, the teacher or school nurse will doubtless detect it and ask at once for an oculist's examination.

In some cities and states not yet employing a school oculist or a school nurse, the teacher is expected to test and record the acuteness of vision of her pupils by means of the "Snellen Test Card."

This consists of a pasteboard card

Dr. Reber's "Kindergarten Test" card, to be used in place of "Snellen C
if child cannot read. The actual card measures 22 x 11 inches, and the t

with nine rows of letters, each row of different sized type and intended to be read at varying distances, the largest type at 200 feet, the smallest at ten. The card must be hung in a good, clear, side light, on a level with the child's head. The child may be placed at ten feet distant from this, and, covering one eye (not pressing upon it) with a card held against nose and forehead, he is asked to read, with the other eye, the different types. If, at the actual distance of but ten feet, he can read the letters that should be read at a distance of twenty feet, he is recorded as being near-sighted "with 10/20 vision"; if, at ten feet, the letters that should be read at thirty or forty feet, he is recorded as having "10/30 or 10/40 vision." Each eye must be tested separately.

A "far-sighted" child will need to be tested with lenses, and this, of course,

must be done by a competent oculist. There are other defects of vision, as those of astigmatism and of lack of accommodation, that must have the oculist's care. Any and all of these are evidenced by the signs we have already described.

Causes of Poor Vision.

What are the causes of defective vision so rife among our children? School life itself is the chief factor, since it means the necessity of constant strained attention for near view, whereas the child is born equipped for seeing things at long range. Excessive use of the eyes, poor light, poor type, poor ink, poor paper, are all causative of poor vision.

School-books should be printed on dull-surfaced paper, rather than on the glazed that is so often used. That a letter smaller than one-ninth of an inch,

or " long primer " type, should be forbidden absolutely, is the verdict of the most careful authorities.

Badly proportioned desks and seats, compelling the pupils to adjust the eyes for too close range, and defective lighting of the school-room are frequent, if not universal, causes of eye-strain. Seats should be adjustable, and easily so, without elaborate or " fussy " contrivance.

Most recent authorities favor such construction as the following: " The edge of the desk should project slightly over the edge of the seat. The top of the desk should incline downward from the horizontal about ten degrees toward the student, and be low enough to allow the forearm to rest without raising the shoulder. The seat should be sufficiently broad to support almost the whole thigh and close enough to the floor to allow the soles of the feet to

rest thereon. It should be slightly hollowed to prevent slipping, and perfectly horizontal rather than inclined. The back should be curved forward to support the loins and to make it easy and comfortable for even weakly children to sit upright."

All light should come from the left, or from the left and rear of the desks. Charts, maps, and blackboards must not be placed between windows, and the latter must be chosen with dead black, not glossy, surfaces.

If the windows are spaced about six feet from the floor, the direct rays of light need not strike the teacher's eyes as she faces a class. There should be at least one square foot of window space to each four square feet of floor space.

Dr. Risley, one of the best ophthalmologists, gives the following as dimensions of an ideal school-room:

FOR THE DOCTOR

Height of ceiling	15 feet
Length of room	32 feet
Width of room	24 feet
Blank wall (rear of room)	4 feet
Blank wall (front of room)	4 feet
Space allowed for group of windows	24 feet

When teachers and parents unite in demanding healthful conditions in school building, even architects will be persuaded to yield to public opinion, and the up-to-date school-house will serve its purpose with far greater efficiency.

CHAPTER XIV

DEFECTIVE HEARING

Defects of Hearing.

WITHIN the last five years greater attention has been given to defects of hearing among school-children. Is it possible for a child to reach school age without being suspected of dulness of hearing? Yes, particularly if it be but slight, in which case the child, if at all bright, depends much on watching or "reading" the eyes and lips and the facial expression of those around him. On the other hand, apparently slight trouble with the ears is too often neglected. Repeated attacks of ear-ache are apt to receive scant attention until some discharge from the ear is seen, and, though this is a signal for the doctor's visit, it is usually too late to prevent disaster.

FOR THE DOCTOR

An aching ear, instead of being washed with hot tea and poulticed with hot bread, needs the doctor always. Says Dr. Ernest Hoag, " The common habit of putting good food in bad places would be funny if it were not often so serious a matter. Sore throats are wrapped with bacon, sore chests covered with stewed onions, boils are poulticed with bread and milk, and various other articles of food are wasted on the outside when they might do much greater good on the inside." The promiscuous dropping of oil, whether heated or not, or yeast, into the ear, is no less dangerous than any of the above.

If a child be born deaf, it is difficult for any one to detect the condition for the first year, or year and a half, at the end of which time the mother listens expectantly for the first words that childish speech brings forth. If she listens, only to be bitterly disappointed, hearing nothing, alarm will send her

to the nearest specialist. But even he, at this early age of the child, will find it extremely difficult to determine the extent of deafness.

How is deafness to be suspected in an older child at school? By restlessness or inattention in the class-room; by the stupid expression of face, or by the dull monotonous voice; by poor spelling, and careless or imperfect speech. When any or all of these are present in a child, both teacher and parent must insist upon careful tests of his hearing. A child with good hearing should detect the ticking of a watch at a distance of two feet, a loud whisper at twenty-five feet.

A simple though crude group test may be carried out by placing all the children in the room at the limit of ordinary class-room distance. Let all close their eyes; then order them in a whisper to perform an unexpected

movement, such as the placing of the right forefinger on the palm of the left hand. Repeat with similar commands. Note any children who fail to respond, or who appear to do so in imitation of the others. Report such children for more careful and individual tests by the school doctor or the private specialist.

Older children may be taken in groups of tens and ordered to write, on pads of paper, whispered numbers. The paper should be checked and notice taken of all who require more careful or individual tests. Like the above, these need to be given by the specialist or aurist.

Causes of Deafness.

One of the commonest causes of deafness, other than actual disease of the ear, is the presence of adenoids and enlarged tonsils. The latter are two glands, seen at the back of the throat,

one on either side of this passage-way. In perfect health they are about the size of the thumb-nail, from an eighth to a quarter of an inch in thickness, and hang partly "free" or loose in the throat. They show, however, all possible differences in size, and may be so large as to meet each other in the middle of the throat, thus causing a decided obstruction.

Adenoids are soft spongy growths found above the tonsils, at the upper part of the throat, back of the nose, where they cannot be seen without a special throat-mirror. If the child be a sufferer from repeated colds, these growths may become quite hard. Whether soft or hard, they, with enlarged tonsils, block or obstruct free breathing through the nose, and the deformity of the flat nose and flat "dish-like" face is the result. In addition they spoil the shape or "set" of the

Front view of adenoid face. Mark the open mouth, broad-bridged nose, drooping eyelids, and drooping posture.

Side view of adenoid case. Note the flat chest, drooping shoulders, curved back-bone, open mouth, and air of weakness.

jaws, crowding the teeth so badly that eating is interfered with. The upper jaw is apt to overhang the lower, the lower jaw is "dropped," with mouth habitually open, and the constant habit of mouth-breathing ensues.

As if this were not enough mischief to make, they are sometimes largest at the very point in the throat which marks the opening of the inch-and-a-half-long passage or tube leading from the throat to the middle ear. Ninety times in a hundred, the pressure that adenoids and enlarged tonsils make upon this small tube produces so much inflammation that catarrh of the middle ear results, ending finally in deafness.

The stupid countenance resulting from the habitually open mouth, and the inevitable mouth-breathing accompanying it, should be enough to put any mother upon her guard. The doctor's

advice must be sought without further delay, and he will doubtless counsel, at once, the removal of the adenoids and tonsils.

This is by no means a dangerous operation, but it needs to be done with great thoroughness, to produce the complete disappearance of all the objectionable conditions we have described.

Temporary Deafness.

Temporary deafness may be caused by the long and obstinate accumulation of hardened wax within the ear canal. Such deafness is apt to occur suddenly, because with even the smallest possible slit-like opening in the mass, the child can hear. It takes months for such masses to collect within the ear without causing damage until sudden moisture, or even damp weather, causes the wax to swell, large enough to close

How to look into the ear without using instruments.

the opening and prevent the passing of any waves of sound within the canal. If this occurs, the mother will be able to detect the dark reddish-brown mass of wax, by gently drawing the lobe of the child's ear upward and slightly out or away from the side of the head. She must take the child to the doctor or to the nearest dispensary, doing nothing herself to remove the mass. In the doctor's skilled hands, careful syringing with sterilized boiled water will remove the mass, although it may consume several minutes. Under no condition is the mother or child at any time to keep continually prodding the ear to remove smaller masses of wax. These roll out of themselves, often unnoticed; the tendency to collect in larger masses is a sign that too much prodding has been done and that the ear has been irritated.

Foreign Bodies in the Ear.

Children sometimes, through mischief or curiosity, put shoe-buttons, pebbles, beads, beans, or peas into their ears. Usually these objects are small enough to come out as easily as they entered, if their removal is attempted by the skilled doctor.

It is only when the unskilled, untrained hand tries to remove the intruder that injury is done. It may be a strong temptation for mother or nurse to attempt to do this, but in her desire let her remember the old caution, "Never put anything smaller than your elbow into the ear."

Defects of Breathing.

Not only is proper breathing through the nose obstructed by adenoids and enlarged tonsils, but "all the way down the line" mischief is done.

Because insufficient air is admitted, the lungs do not receive their proper

supply. When the lungs are abused in this fashion, the chest walls have no opportunity or call to action, and, instead of a well-developed, full-chested boy or girl, we find the chest flat and sunken, with great hollows under the ribs, and stooping shoulders. As the ribs fall in, the breast-bone is pushed forward conspicuously, and we have as a consequence the flat-chested, "pigeon-" or "chicken-breasted" child, as another result of adenoids. Moreover, he will be pale, because he is not getting enough good air to keep his blood of a good red color. He will be stupid and drowsy, because not enough red blood is sent to his brain to keep it awake and at work. The flat-chested boy or girl is the one liable in later life to become the consumptive or "tubercular" child. It is difficult to state where the mischief ends that is produced by the troublesome adenoids and tonsils of which one hears so much.

CHAPTER XV

DEFECTIVE TEETH

Defective Teeth.

SURELY we all recognize poor teeth when we see them. Is not the thing we need most to recognize or realize—before the trouble is made—what causes poor teeth?

We have already made mention of the deformed jaw with its crowded, overlapping teeth, of which adenoids are the cause.

Crooked teeth may result also from the neglect of the first set of teeth in childhood. If through lack of care these first teeth decay early, they must be filled, or, if too far gone, removed. If their roots are allowed to remain,—like old stumps in the forest,— they block the way to the incoming second teeth,

Crooked, carious teeth. In them danger to the whole body lurks at the door of the body. They poison all food and drink.

causing all varieties of ugly jaws. These cause almost unbelievable mischief through the nervous irritation arising from the pressure produced by such wedged-in or "impacted" teeth. We have known boys who, because of this nervousness from impacted teeth, came to be "problems" at home and nuisances in school,—to have developed lying and stealing, ultimately reaching the juvenile court and the house of detention. It has needed only the removal of such teeth to work entire and lasting reformation in such boys.

Neglect of Tooth Brush.

The neglect of the toothbrush is another reason for poor teeth. Among 2677 mouths examined in the public schools of one city, there were found 15,061 dental cavities. In 1477 of these mouths a toothbrush had never been used. Particles of food allowed to

lodge and remain in and between the teeth ferment easily and cause bacteria to grow within the mouth.

A recent investigation has counted more than one hundred varieties of these germs or microbes. If they are not attacked with the toothbrush they are swept down with any swallowing of food into the stomach and even into the bowels, producing many attacks of so-called indigestion. Even appendicitis may be traced to the spread of infection to the bowel by these invading microbes from the mouth.

Tartar and Decay.

Tartar, decay or " caries " or receding gums are frequent danger signals for which we must be continually alert. Tartar is the " every-day " name for the dirty green line of decomposition too often seen at the junction of teeth and gums. If it is not removed, the bac-

teria produced by this filth will cause such irritation of the gums as to make them sore. Then follows the shrinking or "receding" from the teeth. Neglected tartar will attack the polished enamel of the teeth, and by producing the smallest possible cracks or crevices therein will lead the way to ultimate decay or caries.

Signs of Decay.

Common toothache may be the first sign of decay. Because of this one must not be content with the mere relieving of the child's pain by the application of a few drops of oil of cloves, or by the use of the tiny dental plaster over the aching gum. Either the family dentist or the school dentist must be paid an early visit and a search be made for the first appearance of crack or cavity.

"When the boys and girls of Roch-

ester go to Dr. Goler for work certificates, he requires not merely evidence of age and schooling, but examines their eyes, noses, throats, and their teeth. If a boy has twelve decayed teeth Dr. Goler explains to him that good teeth are meant to be not only ornaments, but that they are to serve a purpose, to help digestion and maintain good health, thus making him an efficient worker. If they are put into proper condition he will earn good wages sooner. If the boy's mother protests in tears or anger, that her 'boy does not work with his teeth,' she learns what she never learnt at school, that sound teeth help to pay the rent!"

Care of Teeth.

Unless handicapped by extremely poor health, the teeth should last to the end of life, if properly cared for; and

this care may be made a simple if faithful matter.

They must be cleansed after each meal and again before retiring at night. For this purpose, warm water and a moderately stiff bristle toothbrush will be sufficient, although a simple tooth wash, or powder, or paste, is a slight advantage. A powder made of equal parts of prepared chalk and orris root is simple, cheap and efficient. For the spaces between the teeth which a brush does not reach, the drawing of soft sewing silk, or "dental floss" through them, will remove the smaller particles of food therein lodged, thus leaving no favorable soil for the cultivation of bacteria, that "advance army" of decay. Following the bedtime brushing it is good practice to rinse the mouth with a mild disinfectant "solution"—like diluted peroxide of hydrogen.

CHAPTER XVI

DEFECTIVE SPEECH

Defective Speech.

THE misplaced, overlapping teeth, described as accompanying the "adenoid face," are often responsible for poor speech, or "defective articulation." After the adenoids have been removed, the straightening of the teeth must receive attention before progress will be made in the improvement of the child's speech.

Imperfect Speech Caused by Imperfect Hearing.

Imperfect speech may arise through a small or great defect of hearing. When a child cannot hear the speech of those around him, he cannot be expected to reproduce it properly. Yet this cause is rarely considered, and such

a child is more apt to be teased or scolded because he does not talk properly. If there is unsuspected deafness at the root of the trouble, valuable time may be lost in neglecting to have the hearing tested.

Adenoids a Cause of Defective Speech.

Adenoids and enlarged tonsils may cause defects of speech,—*i.e.*, stuttering and stammering, and, even if faults not so annoying as these are caused, many letters are pronounced imperfectly. With a child so affected his k's are sounded as t's; his g's as d's; his t's are sometimes sounded as " tch." Should any or all of these faults be present, let the mother be warned by the adenoid " signs " we have carefully described, and, if they be present in the smallest degree, she must lose no time in consulting the family physician or a nose and throat specialist.

CHAPTER XVII

DEFECTS OF POSTURE

THUS far we have considered defects of "special organs" or senses. There are general defects of the body, moreover, that assist in the general handicap of humanity, if neglected.

A few years ago the superintendent of the Board of Education in New York City sent printed orders throughout the schools in that city, that the girls should "shift" daily their load of school-books, carrying them upon the right side of the body for one day, upon the left for the next, thus changing regularly. This was done in order to correct, if possible, the growing tendency of lateral spinal curvature among the school-children. Some authorities declare that one in every five girls can show the "twisted" spine.

But this is not the only defect encountered as we scan the pupils in the class-room or the bobbin-winders in the first large factory we enter, or any of the boys and girls who too early take their place in the " industrial " or working army of to-day. What other defects or deformities do we find? They are round shoulders, flat chests, pigeon-breasts, bow-legs, knock-knees, and flat-feet.

We need scarcely to describe them more than by the mere giving of their names. How often do we see them! How often do we neglect them!

How little attention is given to the boy or girl sitting almost " bent double " over the school-book at night. If we do correct him, he will " straighten up " for a few minutes, but in less than half an hour he is bent again like the proverbial " jack-knife." And though we may at last realize the

"habit," as we call it, we do not recognize the causes of the habit, nor the truth that the habit will "go farther and fare worse," causing the lasting deformity of spinal curvature.

Causes of Round Shoulders.

Defective vision and defective hearing, one or both, may be the cause of the stooping shoulders, in the effort to bring the poor eye and ear nearer to the things to be seen and heard. With shoulders thus perpetually bent, it will not be long before the next step in nature's thwarted processes follows, and the flexible spine will be found yielding to the same impulse. So it happens that very soon the backbone is likewise habitually twisted to the same side to which the shoulder is inclined. Hence arises the "lateral curvature" of the spine of which we are hearing so much in these modern days.

Faulty position in writing and studying.

Straight position in studying at table.

FOR THE DOCTOR

Badly adjusted seats and desks in the school-room will produce the same trouble; also badly lighted school-rooms and work-rooms where our boys and girls are employed will do the same thing.

Careless habits of standing or walking with the weight of the body thrown chiefly upon one side, or with the weight of books and bundles upon one side, will provoke a one-sided twist that may become permanent.

How Recognize the Condition?

How may the mother discover this condition? Let her undress the child, and, with the entire back exposed, let her hand "travel" or feel the length of the child's spinal column from the neck to the very tip of the backbone. The rather sharp "knobs" or projections felt all along the spine should be fairly in the centre of the back. If in-

stead of this they are felt at one or the other side of the centre, the mischief is probably begun. Let her look also at the two shoulders and the shoulder-blades; these should be on an exact level. If one is higher or lower than the other, this betokens the carrying over of the spine to one side.

Immediately that this condition is detected, insist upon a doctor's careful examination, and be satisfied with nothing less. He only is the one competent to describe how far the curvature may have gone and how it may be corrected.

Tuberculosis of the Spine.

Instead of a lateral curve of the spine, there may be a bend backward, giving the appearance known commonly as "hunch-back." This, however, is more than a defect in posture. This is a bend caused by the disease

and accompanying destruction of the separate small bones of the spine, and is usually a tubercular process. A child thus affected suffers from constant pain in the back—and great stiffness. He walks stiffly, taking short steps. Stooping and rising are usually also very painful. It goes without saying that constant medical attention is needed for this condition, for the spinal trouble will be commonly accompanied or followed by involvement of the hip (or "hip-joint disease") and of the knee, or the dreaded, familiar "white swelling."

Flat Chest. Pigeon-breast.

Of these deformities we have already spoken at length in describing the "adenoid" child. They may result also from "rickets," a disease of infancy in which the bones remain too soft. Because of the lack of the needed

lime in the milk or other food given to the child, the "cartilage" or gristle, from which bone is made, fails to harden. The inefficient food is, in fact, unable to nourish any part of the body as it should, and all its tissues remain soft, flabby, and underfed.

In such a child with therefore weakly acting lungs, there is little need for the expanding of the ribs and fleshy walls of the chest. Consequently the latter remains flat from lack of use.

Accompanying the flattened ribs, the soft breast-bone, bending too easily, curves forward, giving the "chicken-" or pigeon-breast appearance. These are the children who are prone to develop tuberculosis later in life, because of the handicap with which they are started. Flat chests give no room for healthy lungs, and these organs, being themselves undeveloped, are not ready for the work nature intends for them.

FOR THE DOCTOR

Bow-legs and Knock-knees.

These deformities occur oftenest among the "rhachitic" or rickety children just pictured. In infancy their lack of nourishment makes them fretful and peevish. For this reason, they are rocked and carried and swung in the effort to quiet them. Too long before they are able, the parent or nurse is tempted to make them stand—again in the frantic attempt to quiet or divert them. Of course the soft bones of the legs give way before the weight of the body upon them, and the inevitable bending so produced gives occasion to the "bow-leg" and the turned-in or "knock-knee."

Flat-feet.

What of the deformity known as flat-foot? We pride ourselves upon being so much more knowing than our forbears, in that the once labelled

" growing pains " of childhood are recognized to-day as true rheumatic pains. But we are not yet wise enough for our day and generation, for it is more than possible that some of these are neither " growing " nor rheumatic pains, but are signs of hitherto unrecognized flat-foot.

It was formerly taught that the baby was born flat-footed. According to a great deal of recent, patient investigation, this is a mistake. The arch of a new-born baby's foot is really well formed.

What do we mean by the " arch " of the foot? The foot is " built " on the same principle as the hand,—of many small bones, in order to secure ease of movement; but there is the difference between the hand and foot in that the latter is needed for the support of the entire body. To get this feature of support combined with the lightness

possible for easy motion, the small bones are arranged as the span or arch of a bridge, thus giving us the most wonderful and beautiful piece of architecture in all the world,—" the arch of the human foot!"

The front part of this arch or span slopes downward and is about twice the length of the under section. " Its work is that of balance and shock-absorber. The hinder part is made up of fewer and larger bones, slopes backward and downward, and is made evidently for bearing weight." " The arch is low and well braced at the outer side of the foot,— higher but not so well built up at the inner side."

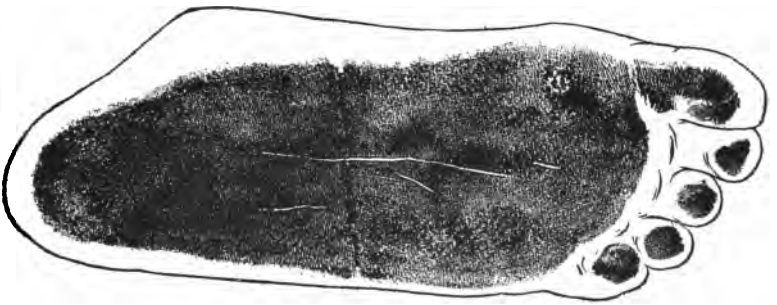
" As soon as the child begins to walk, the inner arch breaks down, and for the next year and a half remains quite flat. During the third year the arch is slowly rebuilt by nature, one foot sometimes faster than the other, and the girl's

faster than the boy's. When the fourth year is entered upon, the feet have nearly reached the adult type, the two feet are alike, and there is no difference between girl and boy. At the sixth year the adult type is fully seen and is ready for use."

Perhaps this explanation will make it easier to understand why any general weakness of the whole body or any overtaxing of the muscles of the foot and leg may easily tend to "break down" again the bony arch of the foot if it is improperly or unwisely used. This will happen more readily if the foot is improperly shod.

Signs of Flat-foot.

What are the symptoms of flat-foot? They are pains in the heel and sole of the foot, in the knees and thighs, in the hips and back. Stiffness and frequent complaints of weariness are likewise results of the condition. If not corrected,



Blue imprint of severe case of flat-foot.

the nervous irritation produced by the constant weariness may result in a weakening of the entire nervous system.

To prove whether the condition exists, let the feet be thoroughly wetted and placed upon a large sheet of paper, thus leaving their "impression." Where flat-foot exists, the imprint of the heel and of the ball of the heel and of the ball of the toes is almost a continuous surface, with the inner edge showing an almost straight line in place of the deep curve found from a normal unbroken arch.

It must be the doctor's work to decide how far damage has been done, and to advise means for its correction.

If the deformity is not far advanced, the doctor may trust to the mother's wise judgment in the choice of a shoe; therefore we suggest that she remember certain principles in choosing sensible footgear.

"There should be a low broad heel,

perhaps even " flanged " a little to give firmer support. The shoe should hold the heel firmly, with a very short flexible shank. The sole must have a straight inner edge with but very little " spring," and should be flat from side to side.

" The upper should be deeper and more roomy at the inner side over the high inner arch than at the other side."

Whenever possible, although this adds about two dollars to the expense, shoes ought to be made upon one's own lasts.

With feet properly shod and better support thus given to the body, the entire general posture or " carriage " will be improved. It is easier to walk with head erect, shoulders squared, and chest high, than when one is " run down at the heels." Strange though it may seem, if one walks slouchily, one is tempted to act slouchily and even think

slouchily, and the girl or boy who begins life with half-hearted, half-souled habits and motives will lay a poor foundation for either health or success in later life.

To-day we hear much of the need of going back to the "simple life." Let us not forget that the simple life must needs be the "sound" life—"a sound mind in a sound body."

To-day, moreover, we are hearing much of the co-operation or working together along all paths of life. The home, the school, the playground, the dietitian, the nurse, the doctor, the dentist,—each is helping the other. To-day the doctor has a wider and different field of usefulness than in any previous history of the world's work. He is needed more than ever to study the child.

"Who saves a child, saves a race," some one has said. And to this end are

slumber, lying passively in any position in which it is laid down, with almost no attempt to move its hands or feet, or its eyes. Such a baby is in special danger of neglect regarding its mental condition, for it is pretty certain to be called a "good baby," and the mother is able to "get so much done" on account of its abnormal quietness. Later on, when walking time comes, the unfounded complacence of the parents will turn to dismay as they see months, and sometimes even years, come and go without their child making any attempt to take his first step. Even under such circumstances, the strange fatuity of fond parents, sometimes abetted by the family physician, will predict that their child will outgrow his present dulness and "brighten up" later on, possibly when he is seven years old; or, if not then, when he is fourteen; or, if that birthday comes without

bringing improvement, when he is twenty-one. If such hoping against hope were not born of the best in human nature, it would deserve unstinted condemnation. As things are, it must be condoned as ignorance for which possibly others are more to blame than the parents.

The Excitable Child.

The very opposite to the apathetic baby is the excitable. Here all is agitation,—constant activity in uncoördinated, purposeless, jerky motions. This is the typical "cross baby," fretful, peevish, nervous to an unexplainable degree, always irritable and crying without cause and refusing to be pacified. Hardly has it been put to sleep with great effort and much rocking before it is again awake and fretting. Even in sleep it does not rest quietly, but jerks about with fitful choreic

movements. Such a child is more fortunate in one respect than its more placid brother. It draws attention and its peculiarities demand investigation. Relatives and friends ask questions; the family physician is consulted concerning it; sometimes specialists are brought in. Unfortunately, too little information is usually given, and often the simple report is made that the baby is " just a crying baby " and the soothing formula of " it will outgrow it " silences the parents' fears, until backwardness in doing the simple things of life awakens them to an appreciation that something is radically wrong.

First Signs of Mental Retardation.

In both classes of children slowness is the first sign of mental trouble. It probably arises from the generally flaccid and incoördinated muscular system, a marked symptom which persists

during the whole life, and enters into every effort, from the first crude attempts at sucking, through incontinence of urine, slavering, with hanging lower lip and hyperæmic salivary glands, faltering attempts at walking and continued shuffling gait, up to the adult's fumbling attempts to perform the acts of any manual occupation. Muscular tone, muscular precision, co-ordination, " snap," vigor, dexterity,—all the little knacks which come so naturally to the normal child from the very first attempt to reach for the light,—are wanting in the defective.

Other Signs of Mental Retardation.

When babyhood is passed and childhood begins with the first words, first steps, and first teeth, other symptoms begin to make their appearance. The hearing is often imperfect, as is manifested in inattention to commands or

spoken discourse and to sounds which would attract the child of normal audition. On this account, speech is delayed, and when words are finally acquired they are so inarticulate that nobody understands what is said except those familiar with the child. This is the case long after the normal child is talking clearly. Speech, indeed, is one of the best indications of the degree of mentality. The natural child begins to talk between nine or ten months and sixteen months of age. Sometimes talking may be slowly acquired, and putting words together with any meaning may be delayed until eighteen months or two years. This, however, should cause apprehension, and if, after an examination by a specialist, no abnormality is found in the vocal organs, grave consideration should be given to the case. If speech is not begun by the seventh year, with no organic defect to

account for it, such as some acute illness, malnutrition, or malformation of vocal organs, mental deficiency is almost certain to be the cause. In that case, training in talking is of no avail; the child does not talk because it has nothing to express.

Walking as a Sign of Feeblemindedness.

Next to speaking in symptomatic importance comes walking. Even after the natural inertia of the defective has been overcome by a budding interest in things about him and a desire to imitate other children in moving about, the muscular incoördination which underlies all his activities gives him a slouchy, staggering gait, with body bent forward and hands falteringly extended like a decrepit old man. There is a curious atavistic return to the ape-attitude in both standing and walking. The body is bent forward at the hips,

the knees are also bent, the hands swing low, and the shoulders droop forward. In movement the feet are dragged, the step is slow, running is an art of late acquirement and performed only with constant fear of falling, steps are climbed one at a time, games are only half entered into, and there is usually a general appearance of weariness unnatural to boisterous childhood. When the defective is excited, and more commonly in the case of the excitable type, a nervous flightiness, with a disposition to wander aimlessly from one thing to another, exhibits itself.

Playing as an Indication of Subnormality.

In play, the best and truest expression of all there is in childhood, the weak-minded unfortunate shows his preference for mates much younger than himself. With them he feels somewhat at home. With those of his own

age he is hopelessly handicapped, and becomes either the petty servant of his comrades or else the butt and sport of the unfeeling ones. Oftentimes his play with others is made up largely of meaningless chatter and silly laughter, with peculiar, excitable movements, like jumping up and down, screaming at intervals, waving his arms, and making grimaces.

Fatigue.

In attempting to learn anything new, whether it be a game or a lesson or the simple acts of dressing, washing, or combing his hair, he very quickly gives evidence of fatigue. He is prone to give up, and turn his flighty and half-given attention to something else. If he is restrained from wandering and compelled to fix his mind upon the task in hand, further fatigue symptoms appear in nervousness of the hands, jerky,

foolish little motions, redness of cheeks, brightness of eyes, followed, if further pressure is brought to bear, by a tremulous excitement, which communicates itself to nearly the whole body and ends with tears and sobbing and complete inability to do anything whatsoever. To push a child to such an extreme is an act of folly, in parent or teacher, impossible to criticise too severely. Yet it is often done, under the blindly ignorant notion that the child can if it will, or that it is lazy, because the uninformed adult measures the child's powers by that of a normal child, and does not understand that this very inability to stick to a task is the first intimation of mental deficiency.

Lack of Attention.

If the feeble-minded of any grade could only pay attention, and pay attention long enough, he could learn

anything as well, if not as fast, as one with a brilliant mind. Attention, however, is the adjustment of some organ of sense—usually the eyes—to some stimulus or upon some point of interest, and depends upon the ability to coördinate and keep certain muscles in a certain tension. This, as has already been said, is a fundamental defect with the weak-minded. Therefore, fatigue, as manifested in flightiness or inattention, is a marked and usual characteristic of the class. In early childhood it shows itself in complete indifference to the toys ordinarily objects of intense desire to a normal child. The healthy baby, even, will strain and grasp and kick to get at some bright-colored object held before its eyes. The little child will run after any new object rolled or thrown before it. Curiosity prompts attention, and attention prompts ready and vigorous movement

toward the interesting toy. Not so with the defective. Stolid indifference is the reward of any one who tries to interest it with the brightest, newest, shiniest toy. If the ball is rolled before it, it stares with blank or inquiring face, but does not make any effort to follow it. Only by the most persistent and painstaking devices is attention aroused, and then to be held but for a moment before either fatigue sets in or some other equally stimulating thing attracts, or stolid indifference again closes down like a pall upon the momentarily lighted face.

Lack of Imitation.

Under such circumstances it is not surprising to find that imitation is at first almost wholly absent, and, later on, in childhood, at the school-age, it is but lame and feeble in comparison with the healthy and ready mimicry of the

vigorous boy or girl. In a family with many other children, the commonest acts of every-day life must be laboriously taught, instead of being spontaneously imitated. Learning to dress costs as much time and labor as learning to write with a normal child. Other daily duties are the same. Washing the face and hands, combing the hair, putting on shoes, tying strings, ribbons, or any of the thousand and one simple acts learned unconsciously by the rest of the family are sources of endless worry and much practice to the helpless ones.

These are general characteristics of the defectives. They are open to inspection to any eye and can be watched daily in the home or in the school. No special skill is required in their observance. Their significance must be understood, and it must not be asserted that their causes reside in the mere unwillingness of the afflicted one, but they

must be treated as symptoms having a sinister meaning for the future mental accomplishments of their possessor, to be overcome by the most patient, skilful, and persistent training by teachers fitted both by nature and by experience for the delicate task.

Stigmata or Physical Marks of Feeble Minds.

Passing now from these general characteristics, we will turn our eyes in a little closer scrutiny upon the various organs of the defective one, and see how they may differ in a typical case from those of a normal human being. In the study of stigmata, it must be remembered that probably no one case will present *all* the signs of degeneration. Neither, on the other hand, should any person be adjudged subnormal because of the presence of even a few of the degenerative marks. In fact, it would be almost a perfect

specimen of the *genus homo* who could submit to a minute inspection and escape without a mark against him. But it takes more than one swallow to make a summer and more than one stigma to make a degenerate, mental or moral. At present there is a distinct reaction against the theories of Lombroso and his school, who taught, but a short time ago, that the mentality and the morality of men should be read from bodily idiosyncrasies as from the pages of a book. Later investigations by Dr. Travis [1] and others tend to modify the extreme views of the stigmatic school, and to place less emphasis upon the shape and size of craniums, and the position and development of ears, eyes, nose, hands, and other organs. A man with silky, curly hair and delicate, tapering fingers may have a few attributes for the career of a successful pickpocket, but it would

[1] The Young Malefactor. Thomas Travis, 1908.

be assuredly preposterous to arrest every man born with such curly hair and slender fingers.

In fact, it is safe to say that physical signs of degeneration, taken by themselves, are most untrustworthy evidence upon which to base predictions of intellectual or moral accomplishments. Taken in consideration with conduct or character already revealed in a long series of actions, all tending downward or toward constantly increasing relative retardation, in any child, shown in falling farther and farther behind his companions in school grades, for example, stigmata, or congenital physical abnormalities, have a most decisive purport for deciding the causes of such tendencies or trends of conduct. A microcephalic skull, or one smaller in girth than the average, signifies nothing in itself regarding mental endowment. Men with such reduced brain spaces are

High-grade imbecile. Much more capable than her appearance indicates.

A high-grade imbecile. Ten years old. Less capable than her appearance indicates.

found both in asylums for dements and in professors' chairs. Only when the small head is found upon the shoulders of some one with a record for extreme slowness, distinct inability to perform certain common mental tasks, like mental arithmetic, or with a record of persistent and uncalled-for criminal acts, does it mean much.

The Skull.

With these words of warning, we will give a few points to be especially noted in the examination of a backward child for incurable mental deficiency. The shape of the skull is a prominent characteristic in many typical cases of imbecility. It may be too small in girth, measured round just above the eyes and ears, and compared with height, weight, and age. For the average girth, or standard, the "Manual of Physical Measurements," by William W. Hast-

ings, published in 1902, by the Y. M. C. A. Training School at Springfield, Mass., or similar tables, can be consulted; though it must be remembered that a slight deviation in this one dimension is not final, and that typical microcephalic imbecility is usually accompanied not only by a small head, but also one which slopes from the forehead to a point or apex over the ears, and then drops suddenly in a nearly perpendicular line to the neck, thus giving a somewhat flattened back or occiput. From above, such a head presents a beautiful oval, with its widest portion about over the ears and narrowing toward the forehead.

Opposite to the microcephalic is the hydrocephalic skull, or the one with "water on the brain." Here again, all hydrocephalics are not feeble-minded. When the condition is found with feeble-minded conduct, it argues de-

cisively that the fluid which has collected in the brain-cavities, or ventricles, or between the brain coverings called meninges, has also brought about degenerative changes in the organ itself. This may be due to the pressure from within, which has caused the bony skull to bulge over the eyes until, in extreme cases, the patient becomes so top-heavy he is unable to walk. In milder cases the bulging shape of the cranium and abnormal girth, measured with the tape-line, will usually fix the cause of the trouble.

Pressure on the Brain.

It might be noted, as a matter of passing interest, that the " pressure on the brain," so often invoked by those unacquainted with the true causes of idiocy, is almost always alleged for the explanation of dulness in the microcephalic child, but almost never in the

case of the hydrocephalic. The opposite, if anything, is true. If there is any abnormal pressure at all upon the brain, it occurs with the big-headed and not with the little-headed sufferers. In neither case is there any severe pressure, for it is the law of growth that hard structures will conform themselves to softer parts of the same organism.

Rickets.

Beside these two common sizes and shapes in skull formation, another must be placed, probably met with more frequently, but possibly not so often accompanied with mental aberrations. It is called the " box-shaped " skull, or the rhachitic skull, because it indicates the presence of rickets in babyhood, or at least some severe fault of nutrition. The skull is brachycephalic, short and broad, with a wide, flat forehead, two rounded corners, one above each eye,

two more corners at the occipito-parietal points and the flattened occipital surface, or with the relatively large dorsal protuberance which seems to be plastered upon an otherwise flat surface.

The " box-shaped " skull does not indicate mental deficiency because of the malformed brain underneath, but because of the malnutrition, marasmus, or rickets suffered at one time by the posessor of such a head, and the consequent non-development of nerve organs along with the general retardation of all parts of the body. A box-shaped skull, therefore, usually accompanies lack of all-around physical growth, under-size, under-weight, deformed ribs bent at the sternum into the so-called " rosary," Harrison's groove, enlarged epiphyses, and general undertone. If such symptoms have been largely overcome by later feeding and

care, the brain development has usually progressed correspondingly.

The Ears.

The study of defective ears alone would make a volume. One specialist enumerated thirty-eight distinctive stigmata of the auditory organ which betrayed lowered mentality in varying degrees. Such minute study of degenerate marks, even from a scientific point alone, are always open to question, and for the clinician have no practical value. The grosser and more striking variations from type, exhibited in the size, shape, position, and development of the ears in any suspected case of degeneracy, have some significance, and should be given their due proportion of weight in the final decision regarding the mental status of their possessor.

The ear taken as a whole may be deformed,—large, twisted, or rudimen-

tary. The lobules are special sources of defect, being rudimentary, absent, or adherent. The pinnæ, the helices, and the anthelices are often faulty and undeveloped. Darwinian tubercles may be present, sometimes several upon the helix of each ear, but are not any more frequent perhaps than with normal people. The position of the ear, looking at the head upon the lateral aspect, frequently appears to be situated farther back than it should be. This often arises from the fact that the skull is flattened in the occipital region, as in the cases of microcephaly and rickets.

Nose.

After the ears comes the nose in diagnostic importance. Its shape and development are of especial significance. The commonest structural abnormalities are those associated with adenoids. Where adenoids have devel-

oped, the nose widens and thickens at the bridge without any marked depression of the bridge, while at the same time the alæ seem to cease their growth and remain infantile, without clear-cut chiselling. This gives a "baby" appearance to the whole nose. In distinction from the ordinary adenoid nose, the nose of the feeble-minded is usually flattened at the bridge, broad at the nostrils, with wide alæ, the whole appearance being coarse and undeveloped.

The Mouth.

In general the mouth belongs to one of two types,—the lips are either thick and coarse or thin and immobile. The palate is misshapen, high-arched, keel-shaped, and V-shaped. Frequently the gums are much swollen and spongy. The tongue is either pointed or thick, fissured, and rough. The teeth are frequently decayed, irregular, and oftentimes the normal number do not ap-

pear. In the case of amentia due to syphilis, the teeth present the peculiar peg-shaped and notched forms, known as Hutchison's teeth. In the lower grades of mentally deficient children sialorrhœa, or drooling, is very common. The corners of the mouth are frequently sore.

The Hands.

The hands are powerless; the prehension is almost always very feeble; the fingers are thick, clubbed, and the nails brittle, rough, and corrugated. Coördination is extremely undeveloped and manual skill very difficult to be acquired.

The Skin.

Probably one of the first signs of degeneracy noticeable upon the presentation of a feeble-minded child is the general condition of the skin. Without particular attention and with only a

casual glance, even the uninitiated observer recognizes some peculiarity about it. The integument is usually coarse and flabby, there is the proneness to eczema, rupia, and other cutaneous diseases in general. Often there is a peculiar pungent odor coming from the skin, not due wholly to lack of bathing. Vegetable and animal parasites find an especially congenial soil in the skin of the degenerate, and will sometimes find permanent abiding places upon the body of the feeble-minded child, when they will not attack, or will be speedily eliminated from, his normal brothers and sisters in the family.

Degrees of Feeble-mindedness.

The above descriptions of the various organs and their stigmata will serve to distinguish mental deficiency in general. When this condition is diagnosed, however, the work has just be-

gun. The next process is to decide the class to which the dement belongs. While there are many degrees of amentia, and the extremes of the highest and the lowest mentality stand out with marked distinctiveness, yet the degrees merge into one another, in stages so slightly separated from those above or below, that the demarcations are exceedingly hard to discern. In other words, the gradations between profound idiocy and high-grade imbecility are not steps nor stages, but, if graphically indicated, should be shown with a curve without a break. In nature, mentally defective children are not graded. Therefore any classification that is made must be looked upon as artificial and to some extent arbitrary.

Use of Classification.

Though this is true, it must not be thought that classification is merely

theoretical or academical, and without practical value. It is extremely necessary to classify a child in order to give him the proper kind of training. For the methods of training, though not the principles, change with degrees of degeneracy. Thus, a high-grade imbecile should be educated by methods different and far more rapid than those applicable to a low-grade imbecile.

More than this, the ultimate extent to which the training can be carried and the intellectual results which will accrue to the subject from it are to a large extent predictable from the degree of mental deficiency diagnosed. Hence, for prognostic purposes, classification is also highly necessary. It is of supreme importance, also, where the problem of cost, the length of time possible to devote to it, are final for deciding what shall be done with any particular child. Theoretically, of course,

and under ideal conditions where provision was made for every defective, such practical considerations as the last would not be important, but under the present conditions they often become decisive.

With these words of introduction we will give a few indications of the different stages of idiocy, idio-imbecility, and imbecility, following the educational classification already laid down.

Signs of Idiocy, Profound and Superficial.

Beginning with idiocy, since that type is marked in its symptoms and comparatively simple and easy of diagnosis, we will proceed to the higher stages. Idiocy is sub-classified as profound and superficial. With the profound idiot, with the apathetic disposition, there is no speech, no sound, no movement, and, as Dr. Barr sums it up, he is " just a breathing mass of help-

lessness." The excited idiot, on the other hand, may utter bleating cries, with constant movements, such as rolling the head and twisting the body and making rhythmic motions of his eyes or his fingers. These characteristics are sufficient to mark this stage, one, probably, with which the public very seldom comes in contact.

Just above the profound idiot comes the superficial. In the case of the apathetic kind, mutism is the rule. Wants are made known by signs, by inarticulate cries. Often the limbs are wholly or partially paralyzed and the extremities are cold and livid. Whenever the idiot is able to walk, his steps are those of tottering infancy; usually he sits all day in idleness, dribbling saliva or blowing bubbles from his mouth, taking almost no notice of things going on about him.

His excitable brother is an imp of

mischief, with a violent temper, wilful, restless, and always in motion, curious to a degree, testing everything with his fingers and tongue, and swallowing everything that he can get into his mouth, including stones, rags, sticks, and garbage of every description. His speech is delayed for many years, and, when finally acquired, consists of nothing more than broken sentences of monosyllable words, accompanied by harsh, inhuman cries and gestures. His gait is an unsteady shuffle, with a dragging, faulty step, knees " jack-knifed " and body bent forward, reminding one of the postures of an ape.

The Idio-imbecile.

Above the idiot and below the imbeciles come the idio-imbeciles. They share the physical characteristics and habits of the idiot with something of the limited character of the imbecile.

Again the dragging, faulty step and lurching gait are met, though much improved over the idiot's. Clumsiness is one of their marked characteristics, and exhibits itself because of increased muscular power yet uncoördinated. Their speech is also limited, and they make free use of signs, often accompanied by a senseless chatter and silly laughter. The silly humor often changes into sudden and unprovoked anger. The skin is coarse and often peels off in large flakes; poor circulation, accompanied by sores, ulcers, chilblains, and frostbites.

The Imbeciles, Low-grade.

In the low-grade imbecile we find the stigmata are still marked. Speech is usually present, but articulation is defective; the vocabulary is limited and meaningless chatter very common. Reading and writing are difficult and

almost impossible to acquire. Often the simplest and most ordinary occupations of making a living require all the ability of this grade, and beyond this, undirected, he will probably never proceed. His life, therefore, should be spent in a colony, doing those things for which he is best fitted under the most careful direction and supervision.

Middle-grade Imbecile.

One remove higher is the middle-grade imbecile. Here we begin to note for the first time an approximation to the normal, a mentality more human than animal. In comparison with the grades below, the middle-grade imbecile is mild and equable in temper. He readily takes in suggestions offered and is almost wholly directed or influenced by his environment and companions. Hence, if left to himself, he readily learns all the bad habits of men with-

out acquiring their more difficult virtues. His vision and hearing are often defective. In school he is dull; his attention is feeble; he is easily fatigued, and, when pressed beyond his endurance with any new tasks, becomes excited, confused, and completely helpless, showing his state of mind by inability to proceed with his tasks, and staring with fixed eyes and red-hot cheeks before him, or else breaking out in anger or giving way to tears. He cannot advance beyond the simplest primary work in books, though he may be interested in nature and in manual training. He is able to talk comparatively well, though defects in articulation are very common. His walk and his movements in general are fairly well coördinated and, in the better class, depart very little from the normal. There is, however, about him a general air of vacuity and listlessness which

marks him out immediately from the alert, precise, normal child.

High-grade Imbecile.

Hardly to be distinguished from the normal child is the high-grade imbecile, and here the diagnosis is specially difficult and can be made only by careful and sometimes prolonged observation, though it is easy to distinguish him from the normal child who makes good progress in school. Between him, however, and the dull or backward schoolchild, there are, on the surface, no special differences. It is only by the closest investigation of his heredity and life history that certain ancestral neurotic tendencies and accumulations of little departures from the normal will finally decide the case.

Idiot Geniuses.

It is especially to this class of high-grade imbeciles, and to some extent

middle-grade imbeciles, that the *idiot savants* belong. These dements often show the most remarkable talent in one or other particular direction. This very frequently takes the form of some manual dexterity, like drawing, wood carving, or carpenter work. Sometimes music claims their genius and they accomplish wonders in a short time. Mathematics, also, attract some, and the " lightning calculator " of public exhibition frequently belongs to this class. It is on account of such items that often the family gives an account of a precocious babyhood, or of bright things said and done, of wonderful memories for dates, numbers, and isolated facts, coupled with a complete inability for systematic recollection or the assimilation of ideas gathered from books or abstract studies. Unless such high-grade imbeciles are carefully

trained in habits of labor and placed in an environment where they will not come into competition with normal men, they are likely to lose one job after the other and finally to drift into the vagabond or ne'er-do-weel class.

PART V

WHAT TO DO BEFORE THE DOCTOR COMES

CHAPTER XIX

WOUNDS

HELPFUL as it is to know just "when to send for the doctor," it is at times vitally important to know what to do before the doctor arrives.

The home, the school-room, and the workshop are, equally, the occasional scenes of accidents and injuries,—when unskilled aid, if accompanied by good judgment, common sense, and prompt care, may do much to relieve suffering and even save life. The factory, the trolley-car, and the automobile are growing increasingly to be the foes of safe existence. Each and all collect, almost daily, their toll of human life. Therefore, because "forewarned is forearmed," it will not come amiss to be prepared for emergencies.

Incised Wounds.

How shall we care for ordinary wounds inflicted by inconsiderate knives, razors, and common tools? Sharp cutting tools make a "clean" cut, or so-called "incised" wound, which is accompanied by "free" or copious bleeding. This must receive attention at once.

Wash such a wound with soft, clean muslin or linen, or, better than either, cheese-cloth or butter-cloth, in very hot water that has been boiled for five or ten minutes. Old flour-bags and salt-bags that have been washed repeatedly into "softness" are likewise excellent for these emergencies. It is a wise plan to keep a stock of such material in supply, cut into generous-sized squares, 6 inches by 6 inches.

Hot Salt Solution.

After the bleeding has stopped, then, with perfectly clean hands and

clean fingers, attempt to bring the edges of the wound together, holding them in place by a " compress," or pad, or pile of these soft clean pieces of cloth folded into smaller squares, having first wrung them in very hot salt water (one teaspoonful of table salt to one pint of boiling water).

The compress must be kept in place, over the wound, by a firm, clean bandage of muslin, from one to three yards in length, and from one-half inch to three inches in width. The size of the bandage will depend upon the location of the wound.

Lacerated Wounds.

The wound inflicted by a dull instrument, such as a nail, club, stone, or brick, will have " ragged," not " clean " edges. Because of this, there is less possibility of uniting the edges of the wound for perfect healing.

Under these conditions, first cleanse

the wound, as directed above, with hot water (previously boiled). Next protect it with the compress of small squares of clean cloth wrung in the hot salt solution described above, and, last of all, apply a firm bandage.

Punctured Wounds.

Wounds inflicted by splinters, fish-hooks, and the like are serious because fragments of these may be imbedded in the skin or deeper tissues. Bad enough of themselves, they are commonly also dirty, and thus carry "infection" into any wound, however small or insignificant it may appear.

Antiseptic Poultice.

Consequently, after the thorough cleansing of the wound and the absolute removal of every last fragment of splinters, hook, or nail, it is a good precaution against infection to make use of the modern "antiseptic poultice,"

until the doctor comes. This consists of (a) a compress of folded squares of cloth (prepared as directed), soaked in hot salt solution (one teaspoonful of table salt to a pint of boiling water). (b) Over the compress place a layer (one inch thick) of clean absorbent cotton wrung in the same salt water. (c) Upon this use a compress of soft, *dry* folded squares of cloth and a half-inch layer of dry, clean absorbent cotton. (d) Cover the entire dressing with clean "paraffin," or waxed paper (an excellent and cheap substitute for oiled muslin, oiled silk, and thin rubber tissue). Lastly, confine all by a firm clean bandage of suitable length and width.

Insect Stings.

Insect stings make painful wounds, sometimes out of all proportion to their size. The "old-fashioned" homely application of mud is not to be despised

for such a catastrophe. If this is not at hand, "hartshorn" or water of ammonia, and, similarly, spirit of camphor, will relieve the pain markedly.

Bleeding.

The management of bleeding calls for the exercise of intelligence. It will be necessary, for instance, to decide whether the bleeding vessel be an artery or a vein.

Arterial Bleeding.

From a cut artery the blood will come with considerable force, in "jets" or spurts. To stop the flow, find the "route" or "line of travel" of the artery that is wounded, and make a firm, steady pressure, with one or both thumbs upon it, *between the wound and the heart.* We will give some familiar "landmarks" whereby it will be possible to find the vessel's route.

This thumb pressure is the best

Method of controlling bleeding by use of a knotted handkerchief twisted by a stick. Prolonged constriction is to be avoided.

Method of controlling bleeding from the leg below the knee.

means, usually, of checking a flow of blood, unless it be extraordinarily free and the vessel too deep to find easily. In such a case, place between the folds of a large clean towel, or handkerchief, a smooth stone, or a potato, as an extra compress. With the handkerchief around the limb and the "compress" directly upon the artery between the wound and the heart, place a stick or cane, or ruler, between the handkerchief and the skin opposite the compress, twisting it firmly and forcibly until the bleeding stops. Upon removing the stick, keep the pad of stone or potato in place for half an hour, to make sure of no return of the flow.

Bleeding from a Vein.

When a vein is wounded, the flow of blood is not in spurts, but in a steady stream and without force. To check it, remove at once all confining bands, garters, or skirt strings between the

wound and the heart; next raise the injured part of the body and apply a compress, made as described above, directly upon the injury.

Capillary Bleeding.

For bleeding from the smallest vessels of the body,—the tiny hair-like tubes that course through the skin of the fingers, the scalp, the toes, the lips, the nose,—squares of clean cheese-cloth or muslin wrung in very hot water, or in ice-cold water, and held in place over the wound, will stop the flow speedily.

Beware of the old remedies of cob-webs and of alum. These are apt to prevent clean healing of wounds.

Bleeding from the Mouth.

Should this arise from the cavity of a tooth, powdered alum may be used here in safety, to check the flow. Finely cracked or chipped ice (chipped

with a clean hat-pin) may be packed into a cavity for the same purpose.

Bleeding from the Nose.

To check nose-bleed until the doctor comes, place iced cloths or cold-water cloths at the back of the neck or at the bridge of the nose. If neither of these stops the flow, a rubber finger-cot, thoroughly cleansed in salt water, may be put into the nostril that is bleeding, and then filled with finely cracked ice.

Bleeding at the Neck.

To stop a serious flow of blood from a wound in the neck, find the muscle that " stretches " from the hard bone behind the ear to the front end of the collar-bone. Along the edge of this muscle in the very middle of the neck, make firm and steady pressure with one or both thumbs. Should these grow very " tired," a compress may be made, as before directed, of tiny pads or piles

of small squares of clean muslin; between the various folds, place firm pads of clean absorbent cotton. Such a compress, though home-made, will be very effectual.

Bleeding from Upper Arm or Shoulder.

To stop the flow of blood in a wound of the arm or shoulder, make firm pressure with one or both thumbs, about two inches from the breast-bone, and against the first rib, which is behind the collar-bone.

Bleeding in Forearm or Hand.

To stop bleeding in a wound of the hand or forearm, bend the forearm firmly upon the arm, and make pressure at the bend of the elbow with the compress of muslin and cotton.

Bleeding at the Thigh.

To check the flow of blood in a wound of the thigh, make firm pressure

with the two thumbs or a compress, about six or eight inches below the groin, toward the inner side of the thigh.

Bleeding from the Leg.

To check bleeding in a wound of the leg, bend the leg firmly upon the thigh, and make pressure with a firm compress behind the knee. Occasionally bleeding from wounds in thigh and leg may be so great that the only effectual pressure will be that made by the home-made " tourniquet " of folded towel and stone or potato pad, with the twisting of the stick, as described above.

Bleeding from the Foot.

Bleeding from a wound in the foot can be controlled by a compress placed between the inner ankle and the heel.

CHAPTER XX

BURNS AND SCALDS

Slight Burns and Scalds.

BURNS AND SCALDS are among the most frequent injuries at home and in the shop. When only redness of the skin is the result, we speak of the burn as "slight." In such cases the homely remedies of dusting dry starch or baking soda, or of covering the burned part with lard or sweet butter, are all good. Better than any of these is the familiar mixture of equal parts of linseed oil and lime water, known to workmen all over the globe as "carron oil."

Extensive Burns.

When the burning has been so severe as to destroy the skin or to produce deep or large blisters, it is regarded as

an "extensive" burn. In caring for such an injury before the doctor sees the sufferer, attempt at first to cut the clothing, with scissors, as close as possible to the injured tissues. Prick all large blisters at their lowest corners, with a clean, new needle. With both of these precautions taken, the wounds, or burns, are ready for "dressing." This will consist of soft clean muslin cloths saturated with the mixture of linseed oil and lime water; over these place one or two layers of waxed or "paraffin" paper; upon this put a layer of clean cotton batting, and lastly, over all, place a comfortable, clean, loose bandage of muslin or soft flannel, its length and width depending upon the portion of the body for which it is required.

In extensive burns, at the same time that one or two attendants are applying the "dressing," others will give

needed attention to the stimulation or the care of the strength of the sufferer. The injury may be so severe as to produce deep "shock." For this it is necessary to surround the patient with hot bottles, or hot plates or bricks. Let him be covered with light blankets and given black coffee, if he can swallow.

Burns with Acids.

Certain strong corrosive acids produce ugly burns; among them are muriatic acid, oil of vitriol, carbolic acid, aqua fortis. Under such conditions the use of baking soda, magnesia, chalk, or lime "dusted" thoroughly upon the burn will relieve pain until proper medical aid is obtained.

Burns with Alkalies.

Painful burns are often produced by caustic soda and potash, strong ammonia, lye, and quicklime. For such in-

juries the use of vinegar and water, lemon juice, or olive oil (even hard cider is quoted by one authority) will relieve suffering until the doctor arrives.

Sunstroke or Heat-stroke.

Heat may be disastrous in other forms than those described above. During the progress of many a heated term, toll is often paid in human life, especially among the weak, the very aged, and very young babies.

In a truly typical condition of sunstroke, what is the appearance of the sufferer? There will be seen a flushed face and reddened eyes, and the skin will be hot and dry. Dizziness, faintness, and headache will be experienced. Lose no time in removing the patient to a cool place in the fresh air and shade. At once loosen all clothing at the neck, waist, and wrists, and put wet towels

or bags of cracked ice at the back of the head and along the spine. If these cannot be obtained, apply the coldest water possible, with a sponge, or even with a "watering pot." Should the heat of the body be intense, the patient may be wrapped in cool, wet sheets, taking care to counteract depression or "shock" by giving black coffee or aromatic ammonia (twenty to thirty drops in a wineglass of water), or two teaspoonfuls of brandy in hot milk.

Frost-bite.

At the opposite end of the thermometer we may find injuries quite as painful as those produced by heat. Frost-bites are not uncommon.

If cold has been prolonged and severe enough to cause thorough freezing, the sufferer's limbs become white and stiff. The tips of the toes, fingers, and nose may appear spotted and pur-

plish,—not unlike bacon in aspect. The deeper the color the greater the cause to fear gangrene as the termination of the injury. Under no consideration is such a patient to be taken near warmth of any kind. Keep him in a cool place for at least two hours, and do not allow him to sleep. Rub the body, a portion at a time, with cold water, or snow, or snow-water. Wrap the parts most injured in cold-water cloths, and use gentle (never violent) rubbing with the hand, as the body becomes less stiff.

As soon as the sufferer can swallow, hot milk or beef tea may be given, to coax the inner, vital warmth of the body into persistence.

CHAPTER XXI

UNCONSCIOUSNESS

Fainting.

FAINTING is the loss of consciousness which is caused by a sudden slowing of the heart's action and the consequent "calling off" of the blood supplied to the brain. It may result from great pain or grief, sudden fear and fright, or even joy; bad air, great loss of blood from any part of the body,—any or all of these may cause fainting. The victim grows pale, cold, clammy, and dizzy. Roaring in the ears and loss of sight are both followed by lack of consciousness.

The first step in caring for such an emergency, if medical aid is not at hand, is to clear away, at once, the

smallest suspicion of a knot of interested by-standers. Remove the patient to the neighborhood of pure air and put him on his back, with the head slightly lower than the body. Loosen every vestige of tight clothing, garters, bands, neckties, collars, and cuffs. Sponge the face and neck and head with cool water, or vinegar and water, alcohol and water, bay rum, or cologne. Use smelling-salts, or water of ammonia, on the handkerchief about the face, but not too near the nose, mouth, or eyes. Do not give stimulants of any kind by the mouth unless the patient is fully able to swallow.

Shock.

Shock is a condition of great depression of the vitality in which the physical powers are more affected than the mental. Even in the greatest cases of shock, the sufferer usually remains

conscious, though he may be "dazed and flighty."

Shock occurs as the result of extensive burns, gunshot wounds, railway and automobile accidents, injuries from machinery, and the like. When it is severe it simulates death closely. The pulse is irregular, almost lost to touch; beads of perspiration cover the body; the features are pinched and shrivelled; the eyes are sunken; breathing is but a sigh. Great restlessness occurs at times. All of these may exist for a few minutes or for several hours, the patient hanging apparently between life and death.

While waiting for the doctor, carry the sufferer to a place of comfort. Should there be broken bones, support these by the clothing, umbrellas, or even pieces of fence rails, while carrying the body from one place to another. Loosen all the clothing, and adjust the

head slightly lower than the body. Apply warmth at once by the use of hot water, hot sand, hot bricks, hot plates, or hot bottles, meanwhile taking extreme care that in doing this the body is well protected from burning, through these well-meant measures. All the sensibility being blunted by the very shock, it is impossible to depend upon the patient's idea or knowledge of discomfort from even great heat. The care-taker must be a kind of "safety thermometer" at this juncture.

As soon as swallowing is possible, stimulate by hot coffee, or whiskey in hot milk (two teaspoonfuls of whiskey in a glass of milk), every fifteen minutes for four doses.

Apoplexy.

A sudden paralysis (often called "a stroke") of a part of the body (usually one-half or one side of it) may follow

an apoplexy, or a rupture of a blood-vessel of the brain. It is usually terrifying because of its abruptness, unless all onlookers are gifted with great presence of mind.

The victim usually falls to the ground as though violently struck down, and becomes unconscious. The face will be red, the breathing will be slow, heavy, and noisy, the cheeks puffing with each inspiration. There may be either a general convulsion or only slight twitching of the face or limbs. If the eyes are observed, one pupil may be much larger than the other, or it may be unusually small, the pupils being seldom the same in appearance.

If no medical aid be present at the moment of the attack, little can be done beyond loosening the clothing about the neck and waist and raising the head a little, while the patient is made com-

fortable lying down. Cracked ice or cold cloths may be applied to the neck and head.

How to Distinguish from Intoxication.

Apoplexy may be mistaken for intoxication, but in the latter one may usually detect the odor of liquor in the breath. Moreover, consciousness can be aroused to some extent by rubbing, pinching, or a forcible application of cold water, in even the deepest stupor of the drunkard.

How to Distinguish from Opium Poisoning.

Apoplexy may be mistaken for opium poisoning. In the latter there will be no "one-sided" paralysis and no noisy breathing. On the contrary, the breathing will appear to have ceased. The face will be pale, not red, as in apoplexy, and both pupils will be extremely small.

What to do in Opium Poisoning.

If one has to deal with opium poisoning before the doctor arrives upon the scene, by every possible means keep the patient awake and aroused by making him walk, even if it be necessary to support him on either side. Under no consideration is he to be allowed to relax into stupor; shout to him, slap his chest with wet towels. Use unabated effort to keep him warm and awake.

Asphyxia or Suffocation.

Suffocation may be caused by prolonged inhalation of the fumes of coke or charcoal, or of coal gas from stoves in small tenement rooms, or from defective furnaces in the most comfortable homes. Illuminating gas and sewer gas leaking through defective pipes and drains may likewise cause suffocation. Under any of these conditions the victim may be found uncon-

scious. The face will be purple and bloated and the breathing heavy and slow. Summon medical aid immediately. Should this be delayed, put the victim at once in the purest air possible, either out of doors, or within, throwing all windows and doors widely open.

Suffocation from Drowning.

Even though there be no trained attendant within beck and call of a rescue party, in the event of drowning, life may often be saved if one will be clear-headed and resourceful. Instantly loosen every vestige of tight clothing around the neck, chest, and stomach. Then remove all sand, water, and mucus from the mouth and nose of the victim, pulling the tongue forward to do this. At the same time turn him face downward, or on his left side, to make possible the escape of water from the stomach and lungs.

He must now be turned face upward, with a roll of clothing under his back below the shoulder-blades, with his head hanging as low as possible. Kneeling at his head, the attendant grasps his arms between the wrists and elbows and draws them out horizontally until they touch each other above his head. Keep them in this position until "one, two, three," are slowly counted. After this is done, carry both arms down again at the side of the body till the elbows and forearms are crossed over the pit of the stomach. In this position all the weight of the attendant is to make pressure upon the abdomen, and, if it be done successfully, there will be heard at this time a distinct "grunt" from the sufferer.

These movements must be repeated about eighteen (18) times each minute, for at least an hour or two, if the patient be slow in responding.

CHAPTER XXII

FRACTURES, DISLOCATIONS, SPRAINS

Fractures or Broken Bones.

RAILROAD ACCIDENTS, trolley-car collisions, runaways, automobiling, bicycling, fallen scaffoldings, are all prolific in harvests of broken bones. Within-doors far less serious causes may produce as grave results. Polished floors, upturned rugs, and dark stairways often contribute to the havoc. If a bone, or several bones, be broken, and the outside skin is in no wise injured, the fracture is called a " simple " one, and the care of such a condition before a surgeon's arrival is not always difficult. It is better to do too little than too much. Doty advises that, " as a rule, the injured person should not

be removed from the position in which he is found, following such accidents, until an examination be made of the extent of the injury." In the mean time the injured part of the body must be protected from further violence, and to secure this it must be given some means of support. Such supports are known to the surgeon as "splints."

Splints.

Temporary splints can be made by a by-stander, of shingles, laths, fence rails, boards, barrel-staves, branches of trees, or boxes. Canes, umbrellas, broomsticks, coat-sleeves, shirt-sleeves, or trouser-legs stuffed with grass, hay, or leaves; pillows,—any of these may be utilized for temporary support of a broken arm, leg, thigh, or hip, until the doctor arrives. To confine the injured part to the "splint," bandages may be made of handkerchiefs, towels, neck-

A blanket splint applied to a child's thigh and leg.

ties, suspenders, rope, cord, strips of clothing, or even green twigs.

Broken Ribs.

If the ribs be broken, the condition is usually difficult to detect. "Short" breathing accompanied by a severe "stitch in the side" may point to this seat of injury. Before the doctor's arrival, procure a flannel or muslin bandage of three-inch width, and completely encircle the entire chest with four or five turns of it.

Broken Collar-bone.

A broken collar-bone is a frequent injury, the result of falling with the weight of the body upon the shoulders. As a result of such an accident, the shoulder droops much below that of the uninjured side, and the sufferer will instinctively support this elbow and forearm with the good arm.

This gives a clue to the best mode of temporary "splint," which will be a wedge-shaped pad, about the size of a large fist, placed in the armpit of the injured side. This may be made of a baseball or boxing glove, or of several folded towels or soft newspapers. The forearm must then be put across the chest, with fingers pointing to the good shoulder, and the elbow held as far back as possible. The entire side may then be given support by two broad towels, one enwrapping completely the elbow of the maimed side and stretching to the opposite or good shoulder. The other must confine the injured arm, forearm, and hand to the chest.

Broken Skull.

What is to be done if the broken bones are those of the head? How may it be determined that such conditions exist? If the injury is extensive and severe, there will be shock (as described

above), unconsciousness, and noisy breathing. The pupils of the eye may be dilated, one more than the other.

If no medical aid is at hand, lay the patient on his back and insist upon perfect quiet. Place cool cloths or an ice-bag on the head. Give no stimulant without the surgeon's orders.

Dislocated Joints.

Instead of broken bones, there may be dislocation of joints, and between the two conditions it may be difficult to decide. When bones are "fractured," the broken fragments give to the injured part of the body an increased motion or "mobility." When they are dislocated, their points of union, or "the joints," are often so out of place that all motion is seriously diminished.

An attempt to correct any dislocation must be made by no other than the doctor or surgeon. Until one comes

the only wise thing to do is to make the patient comfortable. For this it may be necessary to improvise a bed, using a stretcher, a door, or a broad shutter for the purpose. In addition, protect the injured part as directed for fracture, by temporary supports of clothing or pillows, boards and similar devices.

Dislocated Jaw.

The only dislocation safely to be cared for by unskilled hands is that of the lower jaw. This can be replaced by wrapping the thumbs of both hands securely in a handkerchief, napkin, or towel, and placing one of them on either side of the mouth upon the back or "molar teeth." If, in this position, the lower jaw is very firmly pressed down and back, it will usually, with a sharp "click," spring or slide into its proper place.

FOR THE DOCTOR

Sprains.

Sprains may frequently occur from sudden twisting or wrenching of the joints. They are apt to occur unexpectedly, are very painful, and call for prompt care. In addition to the pain there will be rapid swelling and discolored skin, the " black and blue " so familiar in even slight injuries or wounds.

The injured member should be slightly raised and the inflamed part covered with cold cloths. Towels or handkerchiefs filled with cracked ice may be used, if a rubber ice-cap or -bag is not at hand. A bicycle tire or the inner section of an automobile tire may be filled with ice and splendidly serve its purpose of comfort. By the time this is accomplished, the doctor's advice is the only safe one to seek and follow.

CHAPTER XXIII

POISONS

Poisoning.

WHETHER poisoning be accidental or intentional, the consequences thereof may be equally serious in either case. Life is put in equal jeopardy by the neglected medicine-closet containing unlabelled bottles and by the well-planned effort at self-destruction. To guard against the first catastrophe, "the ounce of prevention" will provide for the exact labelling of every bottle, and for the special blue or brown bottle with roughened surface which makes it possible to detect, even "in the dark," that one has the liniment bottle, or the strong ammonia, or the carbolic acid, and not the lime water.

Treatment.

Two things are to be done in the management of poisoning: the first be-

ing, to remove the poison, if possible; the second, to make its action harmless (to counteract it). The remedy used to counteract a poison is called its "antidote"; that used to remove the poison, ordinarily by emptying the stomach, is called an "emetic."

Before medical aid can be summoned, it will be generally safe to attempt to remove the poison by producing vomiting. This can be done mechanically,—*i.e.*, by tickling the back of the throat with the forefinger or a feather, or by the use of certain drinks. Among the latter are—

ALUM,—One tablespoonful dissolved in half a pint of tepid water.

IPECAC,—Two tablespoonfuls of syrup of ipecac.

MUSTARD,—One tablespoonful mixed in half a pint of water.

SALT,—Two tablespoonfuls in half a pint of tepid water.

WHITE VITRIOL,—One-half teaspoonful in half a glass of tepid water.

For convenience and ready reference, we tabulate below the common poisons, with the most practical treatment in each individual condition.

Acid, Carbolic.

Empty the stomach and give olive oil, one quarter of a pint in one pint of water, or give milk, or white of egg in water.

Acid, Hydrochloric (Spirit of Salt); Acid, Oxalic (Salt of Sorrel or Salt of Lemons); Acid, Sulphuric (Oil of Vitriol).

For none of these must an emetic be given. Counteract the poison by giving whiting or chalk, wall plaster, washing soda, or soap and water. Follow this by giving milk and egg, olive oil, or thick gruel.

Acid, Prussic.

Give an emetic very promptly. When the stomach is thoroughly emptied, follow with milk, or olive oil, or white of egg.

Ammonia, Strong; Caustic Potash; Caustic Soda.

Do not give any emetic, but counteract the poison by giving vinegar in water, or lemon juice. Follow with olive oil, one quarter of a pint in one pint of water, or white of egg.

Corrosive Sublimate.

Before using an emetic here, give large quantities of milk, or white of egg mixed with water. After this has been done, use an emetic for thorough emptying of the stomach.

Phosphorus (Rat Paste, Matches).

Empty the stomach thoroughly by the use of a few grains of blue vitriol dissolved in a quarter of a pint of tepid

water. Use magnesia freely, as a purge. Follow these with milk and white of eggs, but do not give oil or fats in any form.

Arsenic, (Fowler's Solution, Rough on Rats, Paris Green).

Give a thorough and prompt emetic. If there be any medicine at hand containing iron, give it to counteract the poison. Follow with milk and eggs, olive oil, or barley water.

Antimony (Tartar Emetic).

Cause free vomiting by large quantities of tepid water. Counteract the poison with strong tea. After all vomiting has ceased, give white of egg in water or milk, abundantly.

Poisonous Plants ("Deadly Nightshade," "Jimson Weed," Toadstools, Tobacco).

Produce vomiting by giving an emetic. Follow with strong coffee or brandy.

FOR THE DOCTOR

Spoiled Food (Ptomaine Poisoning).

Produce vomiting by giving an emetic, and purge with castor oil. Follow this with strong coffee or brandy.

Lunar Caustic.

Produce prompt vomiting by two tablespoonfuls of common salt in a tumblerful of warm water. Follow this by large quantities of white of egg in water.

Opium (Laudanum, Morphine, Paregoric, "Soothing Syrups").

The management of opium poisoning is carefully described in a previous section.

It may not be amiss to suggest the outfit of an emergency closet in the home:

Absorbent cotton, ½ pound.
Clean cotton batting, 1 roll.
Clean muslin or linen, cut and folded into squares of various sizes (4 x 4 inches, 6 x 6 inches), kept in covered glass jars.

Adhesive plaster, 2 inches wide, a five-yard roll or tin spool.
"New skin," a small bottle.
Prepared mustard leaves.
Prepared tooth or dental plasters.
Paraffin or waxed paper, 1 roll.
Spirit lamp.
Medicine-droppers (kept in closed bottles).

Alcohol.	Glycerin.
Alum (powdered).	Hartshorn.
Aromatic ammonia.	Ipecac, syrup of.
Baking soda.	Lime water.
Borax.	Linseed oil.
Brandy.	Peroxide of hydrogen.
Camphor, water of.	Paregoric.
Camphor, spirit of.	Sweet oil.
Castor oil.	Sweet spirits of nitre.

Witch-hazel.

For bandages, made in and for emergencies, the housewife is prudent who has a clean, safe, dust-proof "stow-away" for old, soft, clean sheets, soft, old towels and napkins. The same housewife will doubtless keep in generous supply for the regular cleansing or "disinfection" of all

the sinks and privy-bowls in the house,—

Chlorinated lime, used by dissolving one pound to one gallon of water.

Copperas, used by dissolving two pounds to one gallon of water.

Washing soda, used by dissolving one-quarter of a pound in one gallon of boiling water.

Above all, she will not forget the two surest disinfectants known, sunshine and fresh air; the house and home plentifully provided with these is the one that persuades health to abide within its walls. Of her who rules therein it may usually be said,—

"She looketh well to the ways of her household;
Her children rise up and call her blessed;
She stretcheth out her hand to the poor;
Strength and dignity are her clothing;
And she laugheth at the time to come!"

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